

**Boston Harbor Islands
Comprehensive Plan – Support Docs.**

Long & Rainsford Islands
Peddock's Island
Spectacle Island

March 1973

Boston Harbor Islands
Comprehensive Plan



Long & Rainsford Islands
Support Documentation

prepared for:
Massachusetts Department of Natural Resources



by:
Metropolitan Area Planning Council

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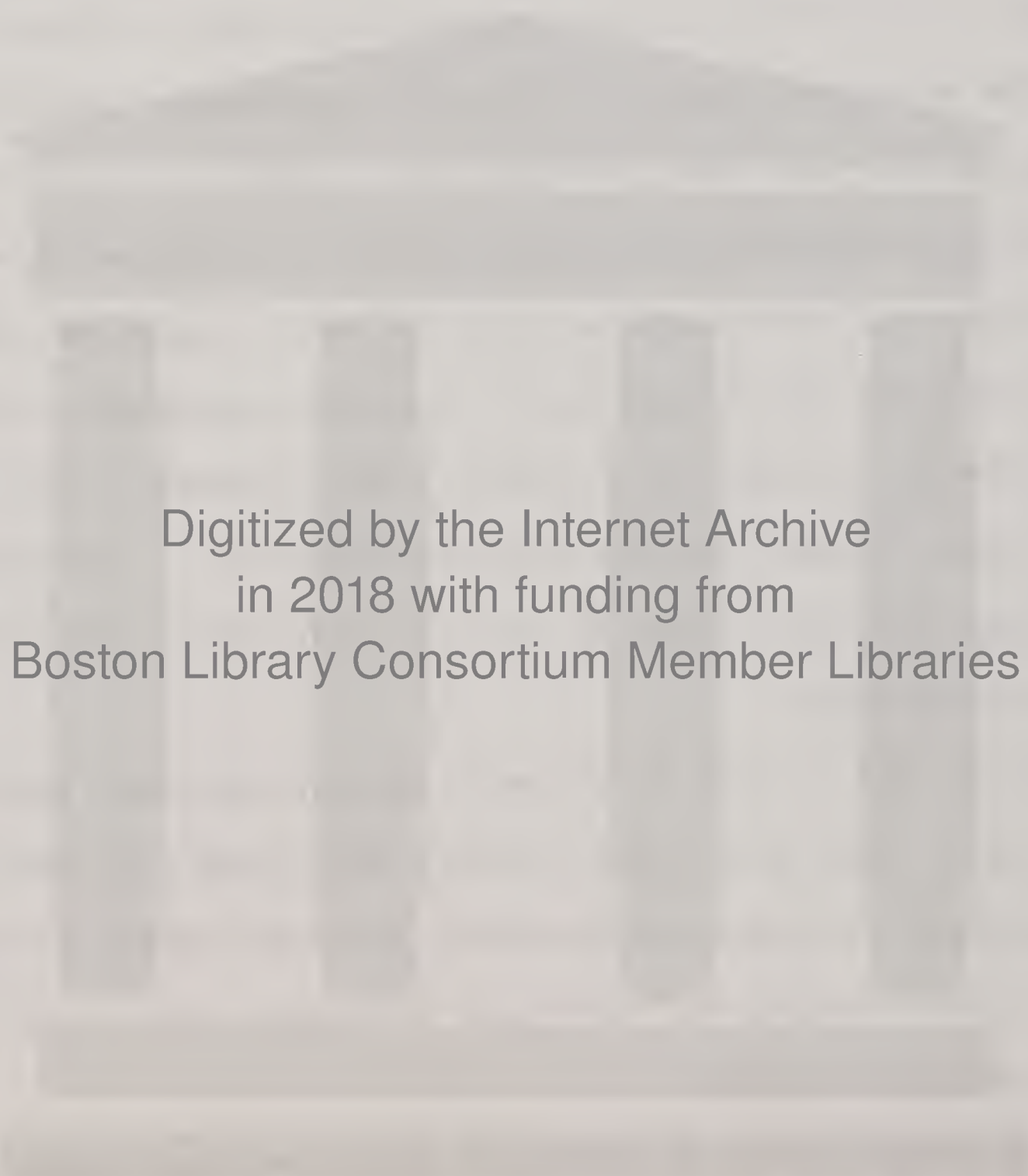
March 1973

LONG ISLAND

Description and History. Long Island, 213 acres, is the largest island in the Harbor and is owned by the City of Boston. It is connected to Moon Island by a two lane steel bridge, built in 1951. Granted to the City of Boston in 1634, it was leased to about 40 tenant farmers. After the Revolution, John Nelson, a Revolutionary War hero, was the most prominent resident, eventually controlling the entire Island. It became known as Long Island in 1794 about the time the first lighthouse was constructed on Long Island Head. A second lighthouse, built as a replacement in 1819, still stands today although it has been moved twice to make room for military structures. The unmanned lighthouse and site, owned by the U.S. Government, are maintained by the Coast Guard.

About 1850, a land development company completed purchase of the Island. They drew plans dividing the Island into small lots and envisioned a large new community, but were unable to sell the lots. A small colony of Portuguese fishermen lived on the Island from about 1850 to 1887.

The Island became an important conscript camp during the Civil War. By 1863, General Devens commanded several companies of heavy artillery and about 1,000 draftees. The post was then known as Camp Wightman. Several regiments of troops were ferried from Camp Wightman to fight in the South. Just before the outbreak of the War a battery of guns had been constructed on Long





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LONG ISLAND

SLOPE

 0 - 5%


 5 - 12%

 12% and above

GEOLOGY

 Beach, Sand, Gravel


 Silt, Muck, Peat


 Man-made


 Drumlin


 Bedrock


BEACH AREAS


 Mostly Sand (fine sand)


 Coarse Sand (coarse grade sand, pebbles, shells)

 Mixed (coarse sand, pebbles, shells, small rocks)

 Rocky (small rocks to 8 inches in diameter)

 Seawall/Rip-rap (broken/intact seawall/rip-rap)

 Steep-eroded Banks (areas of major erosion)

 Bedrock (outcropping)



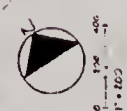
Island Head. The battery still exists and is an important contribution to the historic interest of the Island. Also of some historic interest is a memorial to 79 Civil War dead in a cemetery located on the southern portion of the Island. These war dead were moved from Rainsford Island and reinterred here. In 1867 the camp was officially acquired and named Fort Strong, after Major General George C. Strong, who was killed at Fort Wagner, South Carolina in 1863.

Fort Strong underwent extensive renovation in 1899. Several batteries of 6 and 12 inch guns were emplaced. One thousand five hundred men were quartered at the Fort during World War I, but by World War II the guns were obsolete, although the Fort served as a mine operations center. Fort Strong was declared surplus property by the Army after 1946. Today most of the remains of old Fort Strong are located on the drumlin, known as Long Island Head. This drumlin is covered with sumac and young poplars. A large open area, which was formerly the Fort parade ground lies at the foot of Long Island Head. One end of this area is littered with building rubble and old foundations of former military structures that were destroyed by the City in 1968. A coursed granite seawall surrounds Long Island Head and the east side of the parade ground area is protected by rip-rap.

In 1872, a large hotel was built on the site of what is now the Chronic Disease Hospital. It became a popular resort and illegal prize fights were reported to be part of the attraction. The City purchased the hotel building and a large portion of the Island for use by the City charities in 1882. Six hundred and fifty paupers were institutionalized on the Island in 1885. The construction of a new facility to care for the poor was begun in 1891 and completed in 1892. It became known as the Boston Almshouse in 1896 and was converted to a home and hospital for unwed mothers in 1921. A dormitory for homeless men was added in 1928 and a large recreation hall, known as the Curley Building plus several hospital structures were built in 1932. A dormitory for 300 alcoholics was added in 1940. Today the Long Island Chronic Disease Hospital has over 900 beds, and a staff of nearly 400.

The hospital is the dominant feature of the middle drumlin area of the Island. The complex of about 20 buildings covers an area of 60 acres. A cemetery for 2,000 unmarked graves was once used as a potter's field by the hospital. A new chapel was added to the hospital area in 1958 and a new kitchen and dining hall are presently under construction.

NATURAL FACTORS



MAN-MADE FACTORS

The southwestern end of the Island has a high, narrow, eroded drumlin, West Head, with a beautiful stand of pines. There are several acres of low wetland where the Island broadens. In addition to the vegetation normally associated with a marsh there are several stands of pines and apple trees and areas of sumac and sapling poplars. This area supports a large population of rabbits and birds and is an excellent wildlife habitat.

An abandoned Nike site with several buildings, once housed two missiles in underground silos. It is currently used for the storage of 700,000 volumes from the Boston Public Library. This storage space will be unnecessary once the new library addition is completed.

The shore on the small cove south of Bass Point has an excellent sand and gravel beach. The point itself has a steep beach with deep water even at low tide. The rest of the shore of the Island consists mainly of rocky, narrow beaches. Productive clam flats are located along the westerly shore, but are presently classified as contaminated. The central drumlin, where the hospital is located has steep eroded banks on both sides of the Island.

RAINSFORD ISLAND


Description and History. Rainsford Island, owned by the City of Boston is located in Quincy Bay just off the Long Island shore. It is a small, 11.4 acre Island which was originally granted to Edward Rainsford about 1636 for use as a farm. The quarantine hospital was moved to Rainsford Island from Spectacle Island in 1737. It continued to operate there until 1852. The Island was a popular summer resort in spite of the presence of the hospital. City authorities allowed the innkeeper to take in boarders when there were no infectious diseases at the hospital. Many buildings were constructed during the hospital's 115 year tenancy. The most imposing structure was the smallpox hospital. Designed as a Greek Temple, it was constructed of stone in 1832. Hundreds of those who died from infectious diseases lie buried on the Island.


In 1852, the Commonwealth of Massachusetts acquired the Island for use as the state almshouse. About 1866 the State abandoned the site and Boston converted the facilities into the City Poorhouse. Several veterans of the Civil War lived on the Island until 1882, when they were transferred to the Soldiers Home in Chelsea.


In 1882, female paupers were housed on Rainsford Island. The institution was then reorganized as a detention center for juveniles and in 1895 became known as the Suffolk School for Boys. The boys were transferred to other centers in 1920 and the run-down facilities were permanently closed. Today all that remains are a few ruins of foundations and old pilings from the docks.

RAINSFORD ISLAND

SLOPE


 0 - 5%


 5 - 12%

 12% and above



GEOLOGY

 Beach, Sand, Gravel

 Silt, Muck, Peat


 Man-made


 Drumlin


 Bedrock





BEACH AREAS


 Mostly Sand (fine sand)


 Coarse Sand (coarse grade sand, pebbles, shells)

 Mixed (coarse sand, pebbles, shells, small rocks)

 Rocky (small rocks to 8 inches in diameter)

 Seawall/Rip-rap (broken/intact seawall/rip-rap)

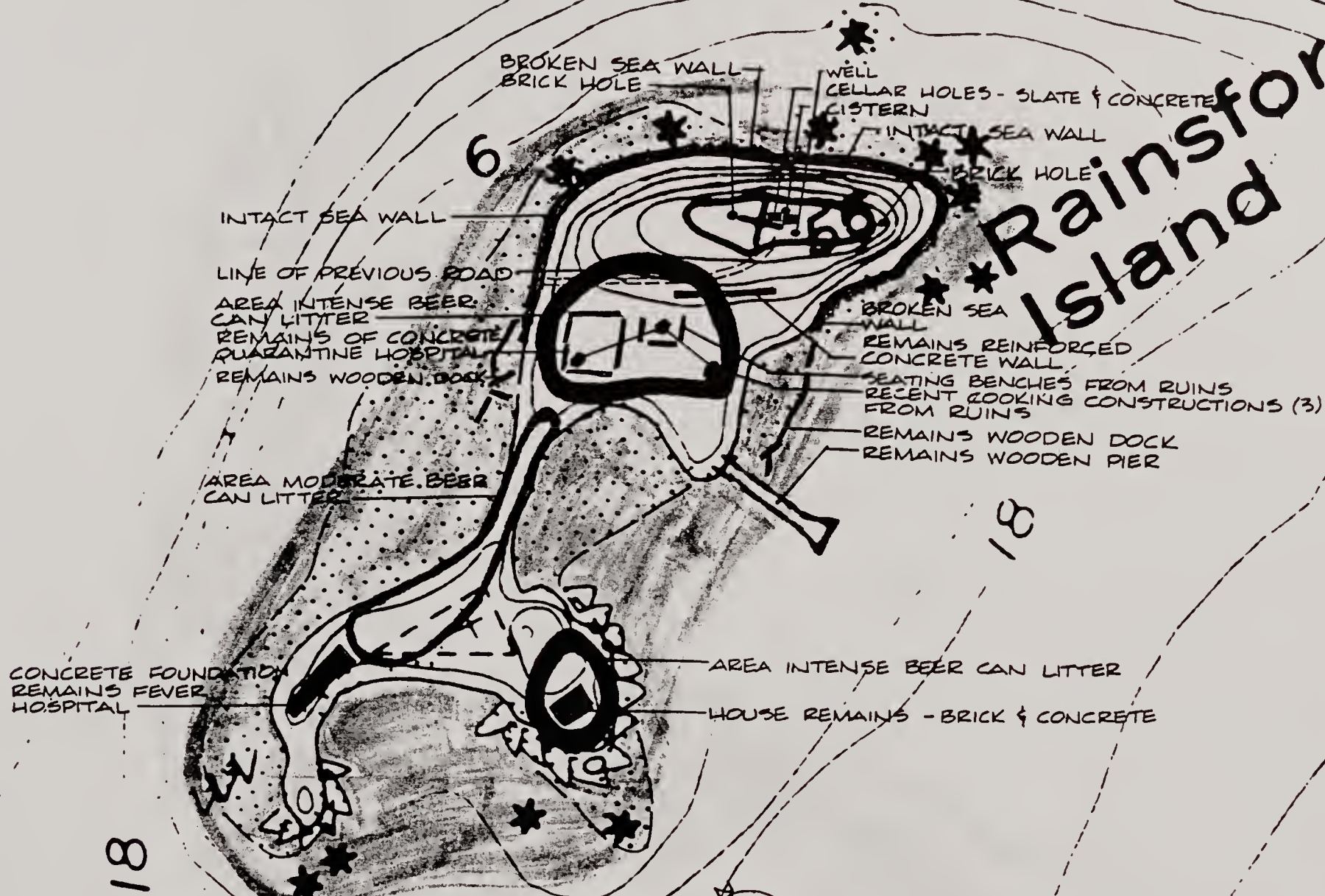
 Steep-eroded Banks (areas of major erosion)

 Bedrock (outcropping)



A drumlin protected by a broken seawall is the dominant feature on one end and gives the Island its interesting gentle shape. Two small, natural coves facing the south and southwest are separated by an outcrop of bedrock nearly 30 feet high. Large deposits of beer cans attest to the fact that the Island is heavily visited.

Rainford Island



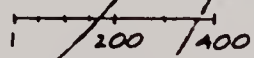
Quarantine Rocks

LEGEND & NOTES

VEGETATION
STONE & SHELL BEACH
LITTER

ALL OTHER FACTORS
ARE INDICATED ON THE
DRAWING.

1 INCH = 200 FEET



MAN-MADE FACTORS



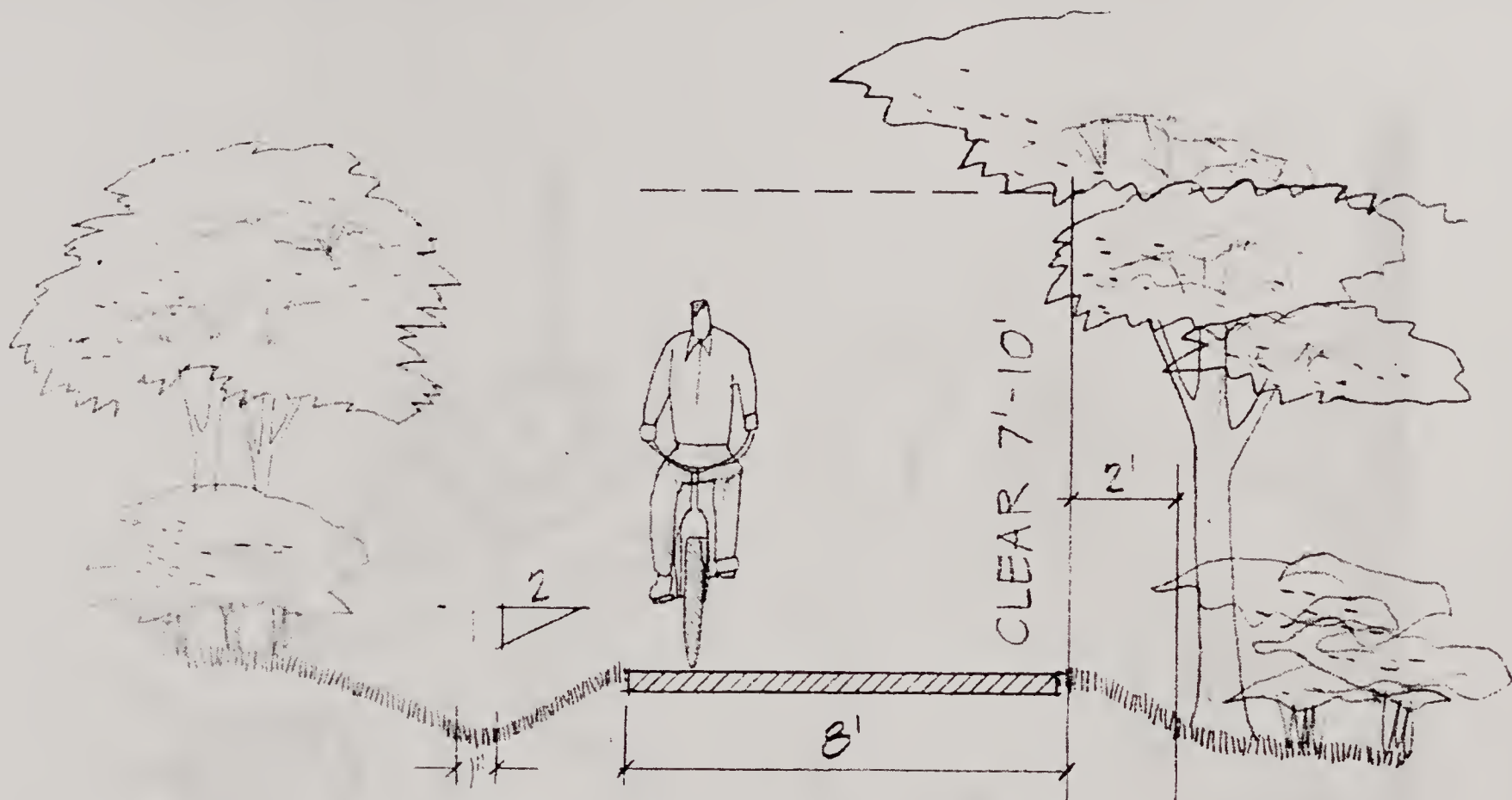
INTENSIVE RECREATION

LONG ISLAND

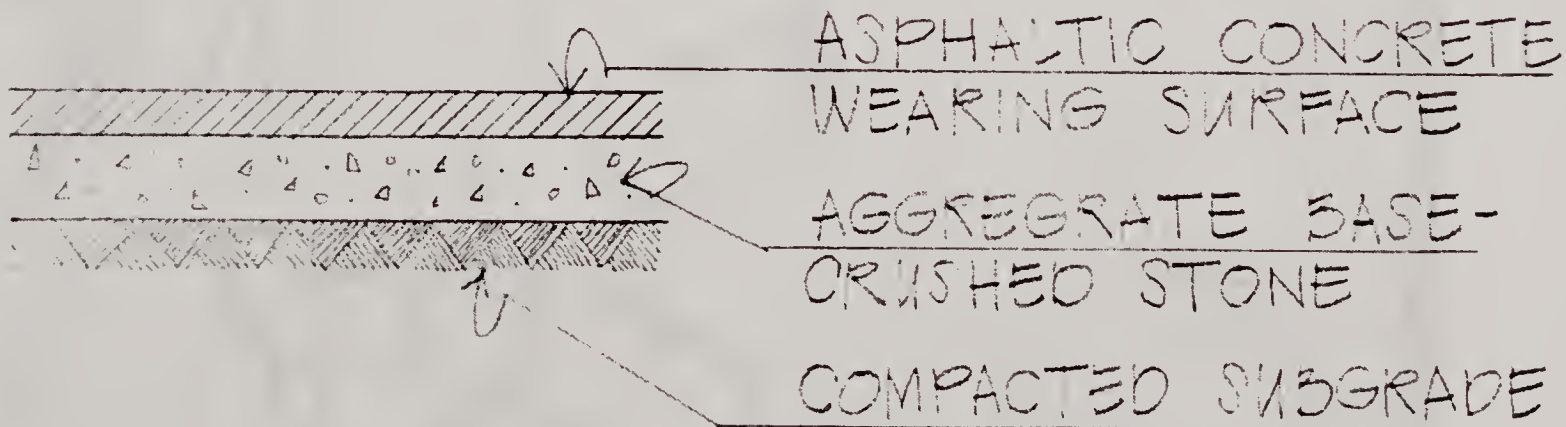
Plan. The plan for Long Island optimizes its potential for recreational activity because of its size and easy accessibility. The major features of the plan include a large Visitor Center at the northeast end, grass playfields and a restored Fort Strong. The southwest portion of the island includes a swimming beach for 400 bathers, with an adjacent picnic area; a major outdoor recreation facility including several playfields, a swimming and wading pool, tennis courts, and an outdoor eating area; a wetland interpretive center with trails and viewing points designed as an educational facility with explanatory signs; and group camping sites for organized camping enthusiasts and day campers. A 3-mile bicycle path takes advantage of the length of the Island. The plan for Long Island emphasizes that it is the largest and will be the most accessible park with ocean shoreline in the Boston Metropolitan Area. It is a major stop on both of the ferry routes; the Boston to Nantasket "spine", and the Dorchester Bay Loop. Passengers going to Long Island can use that ferry line, giving Long Island the highest level of service in the Harbor. It is also accessible by public transit, utilizing buses connecting with the South Shore Extension of the MBTA and by charter bus. It has been noted that control of access, particularly by private autos, is the key to the success of this plan.

A major consideration of this plan is the future of Long Island Chronic Disease Hospital. The facility is the present day manifestation of a 90 year history of institutional misuse of the Island. It is symptomatic of some of our society's most difficult problems, the proper care of the old, the chronically ill, and the alcoholic. Parts of the existing facility do not comply with fire and safety codes, public health licensing requirements, or hospital accreditation standards. Currently, the City of Boston is applying for Federal funds to improve the facilities at Long Island Hospital. In addition, the City has stated that it will undertake a comprehensive study of the future of the hospital, including possible relocation of the services it provides. At the present time, the City states that it has no alternative long-term beds but the hospital is in need of upgrading or it will be closed. Current concepts of care for the chronically ill indicate that community-centered care may offer a more effective alternative than that which can be readily provided at a facility as relatively isolated as Long Island Hospital.

The plan for Long Island has assumed that the Hospital will remain on the Island until alternatives for relocation have been developed and evaluated. In the meantime, development of the park should begin as soon as possible.



TYPICAL BIKE PATH W/
CLEARING AND DRAINAGE
 SCALE 1/4" = 1'-0"



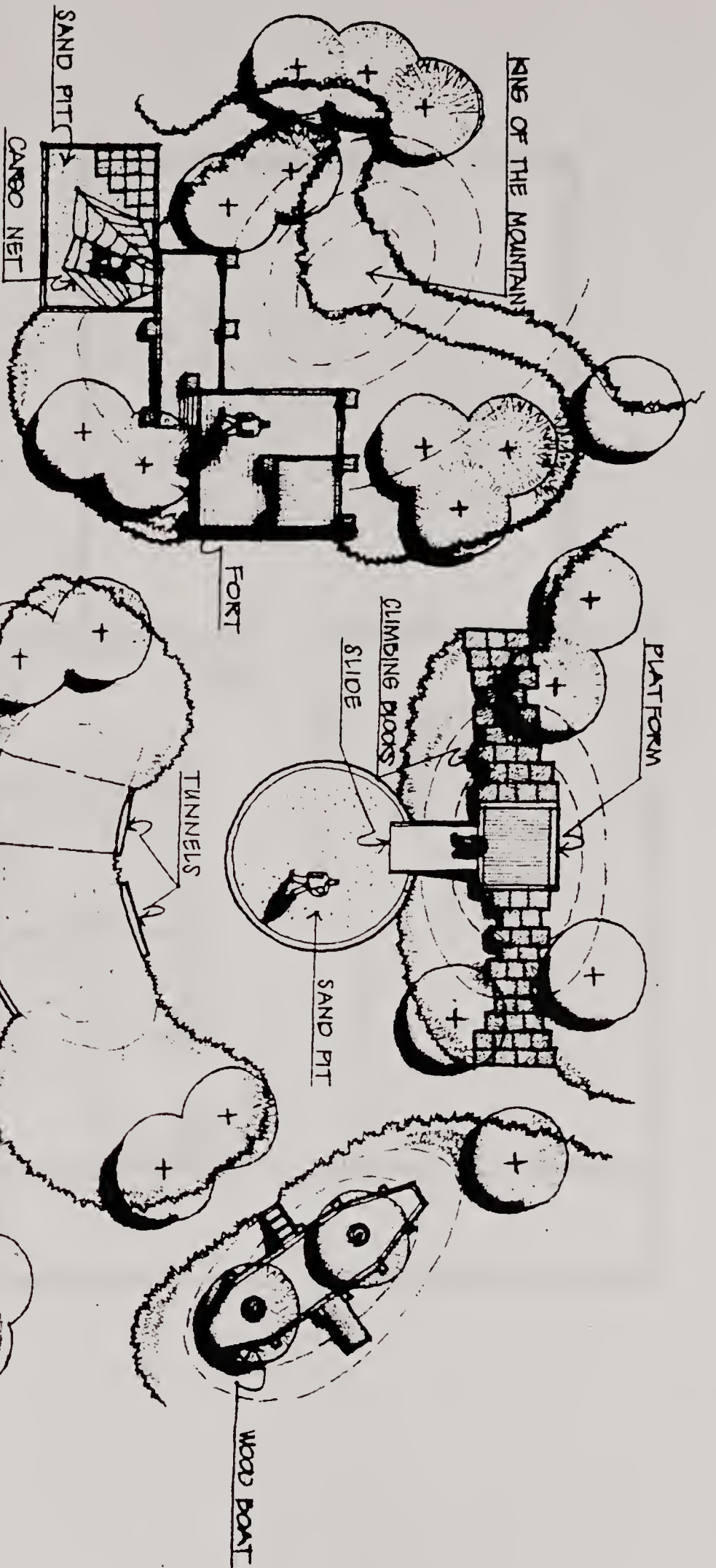
TYPICAL SECTION - BASE DESIGN
 SCALE 1" = 1'-0"

TYPICAL BICYCLE PATH DETAILS
 BOSTON HARBOR ISLANDS

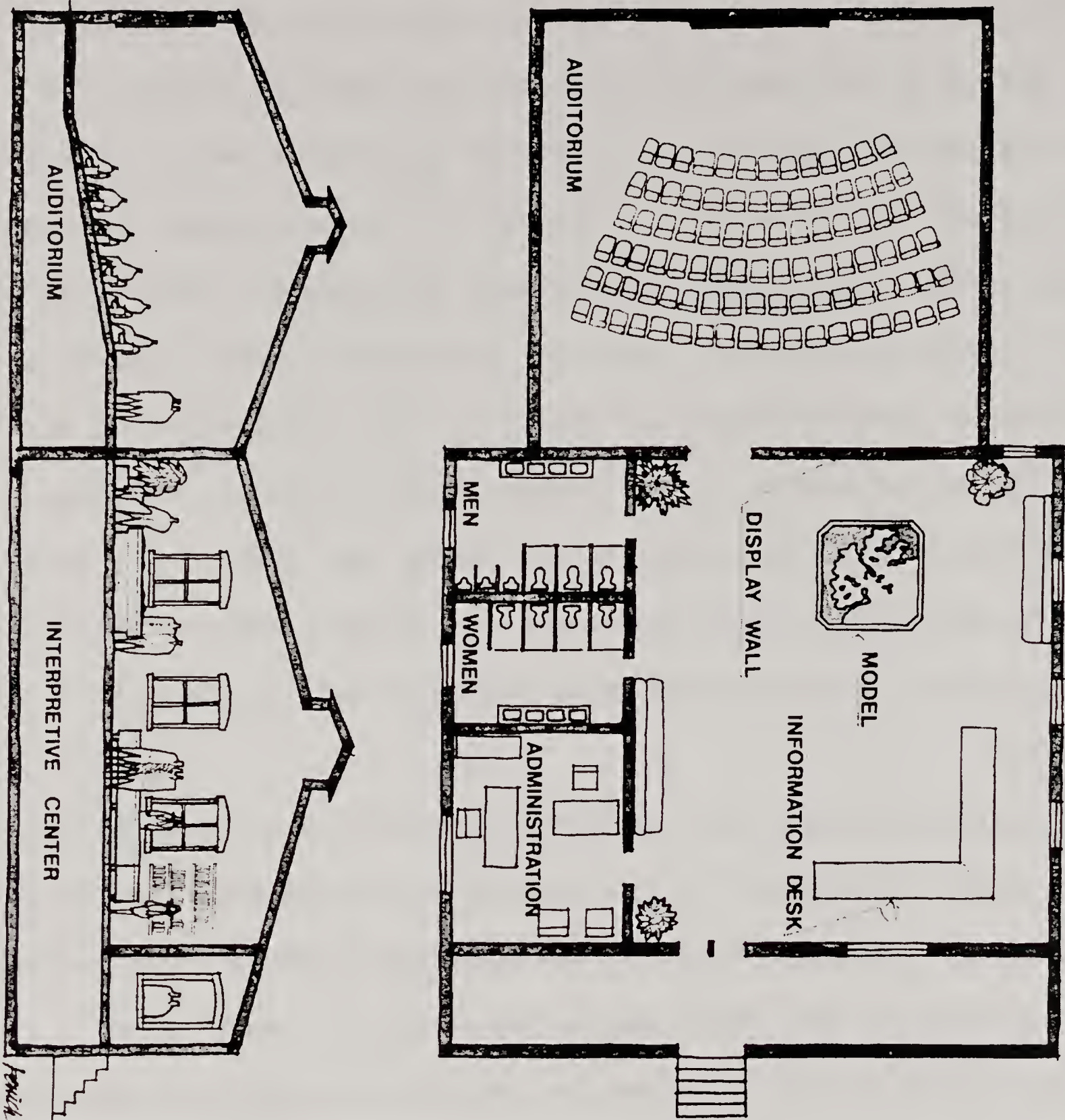
SECTION 1/4" = 1'-0"



PLAN 1/4" = 1'-0"



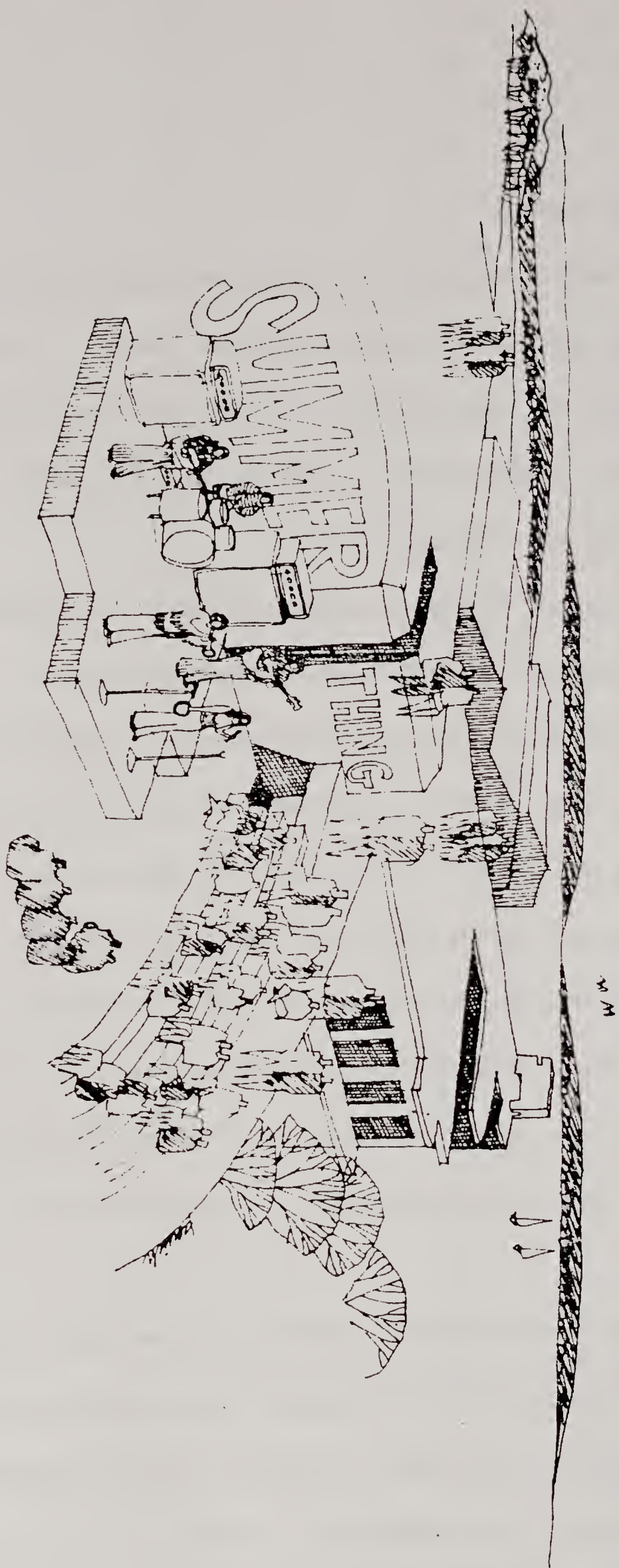
CHILDREN'S PLAY



VISITOR CENTER

The plan proposes a major Visitor Center with a comfort station and refreshment stand located at the base of Long Island Head adjacent to the ferry stops. The boat dock combines facilities for a fishing pier and a boat landing for approximately 50 small craft. The Visitor Center presents a general orientation to the Harbor Islands Park, supplemented by more specific information on the "Dorchester Bay-Inner Harbor Sub-System" - Long, Deer, Rainsford, Spectacle, Castle, and Thompson Islands. The presentation will cover the history of the Islands and surrounding shoreline and the Conservation and recreation programs that exist on each Island.

The top of Long Island Head provides some of the most magnificent views of Boston Harbor and vantage points should be developed to take advantage of the height and location of this dominant in the center of the Harbor. Noise from jet aircraft landing at Logan Airport, runway 15-33, is a limitation of any use on Long Island Head. However, predominant winds during the summer months make other runways more desirable. Renovation of Fort Strong should emphasize safety and selective reuse of some of the structures. The Fort is visually and historically interesting and should be provided with interpretive signs to explain its design and use. The plan locates playfields on the site of the old parade ground with trees to provide shade and wind screens. A bus stop and parking area for 50 cars are provided.



OUTDOOR CONCERTS

Two large group campsites are located in a relatively well protected area just south of the Hospital. Each site can accommodate up to 150 campers and includes a comfort station/bathhouse and day-use shelter with centralized cooking and dining facilities. The sites are subdivided into several smaller areas that can be used by smaller groups.

The area of the old Nike Missile site is developed as a major outdoor recreation facility. A swimming pool, playfields, tennis courts, outdoor cafe, and comfort station/bathhouse are so located as to take advantage of the existing topography and minimize the impact of these facilities on the environment. A bus stop and parking for 60 cars are provided at this site.

The fresh water wetland located adjacent to the abandoned Nike site is a nesting and loafing area for birds. Planning should encourage wildlife and trails; a small interpretive center should be designed to provide limited access to this interesting environment as an educational experience.

A swimming beach with a capacity of about 400 bathers is located on the shore south of Bass Point. A picnic area with 50 tables is situated among the pines bordering the beach. Parking for 50 cars, a bus stop and a comfort station/bathhouse are also located near the swimming beach.



WILDLIFE SANCTUARY

A launching ramp for small boats is proposed for Bass Point, with parking for 40 cars with boat trailers. The steep beach and deep water make this an excellent site for a public access ramp.

The existing straight road bisects the Island. In order to reserve a large area uninterrupted by buses and autos, to route traffic around and not through the hospital, and to provide a more delightful visual experience, the existing road has been realigned. The new road follows the eastern edge of the Island, past Bass Point and then follows the natural topography across to the western edge where it joins the newly constructed road that passes by the west side of the hospital. The new alignment provides excellent views of the Harbor on both sides of the Island and better conforms to the natural topography of the Island.

The plan proposes three stages for the eventual phasing-out of the Hospital. The first phase involves the construction of the new road to provide access to Long Island Head, and the ferry dock Visitor Center complex, without passing through the center of the hospital grounds and disturbing patients and other hospital activities.

The second phase proposes the removal of several hospital building with indoor track, swimming pool, and hockey rink as important features. Reuse of some of the hospital buildings is suggested as a possibility for future study. The new dining hall might be remodeled as an inviting Harbor-view restaurant.

The Curley Building might serve a variety of functions, but especially, as a conference and recreation center, dance hall, theater, and education facility. The chapel will continue to be used as a house of worship. Boston Harbor lacks a major maritime museum which might be housed in a reused hospital building or in a new building designed for that purpose.

RAINSFORD ISLAND

Plan. The plan for Rainsford Island emphasizes its natural attractiveness for day-use and as an informal island picnic stop for small boatmen. A small pier for a maximum of five small boats is provided on the south shore to facilitate maintenance of the Island. A small day-use shelter, with chemical toilets is located near the boat dock. The coursed granite seawall is in need of repair, and planting for erosion control should be done on the eastern side of the drumlin. Trails, surfaced with crushed stone, sand and shells, are indicated to protect the natural environment of the Island by minimizing pedestrian use of the grassy hillsides. One natural cove provides an excellent informal swimming beach. The ruins of an old well that once supplied the summer resort and the variety of institutions that have used the Island, could potentially be rehabilitated as an interesting and historic source of fresh water.

SEAWALLS AND REVETMENTS

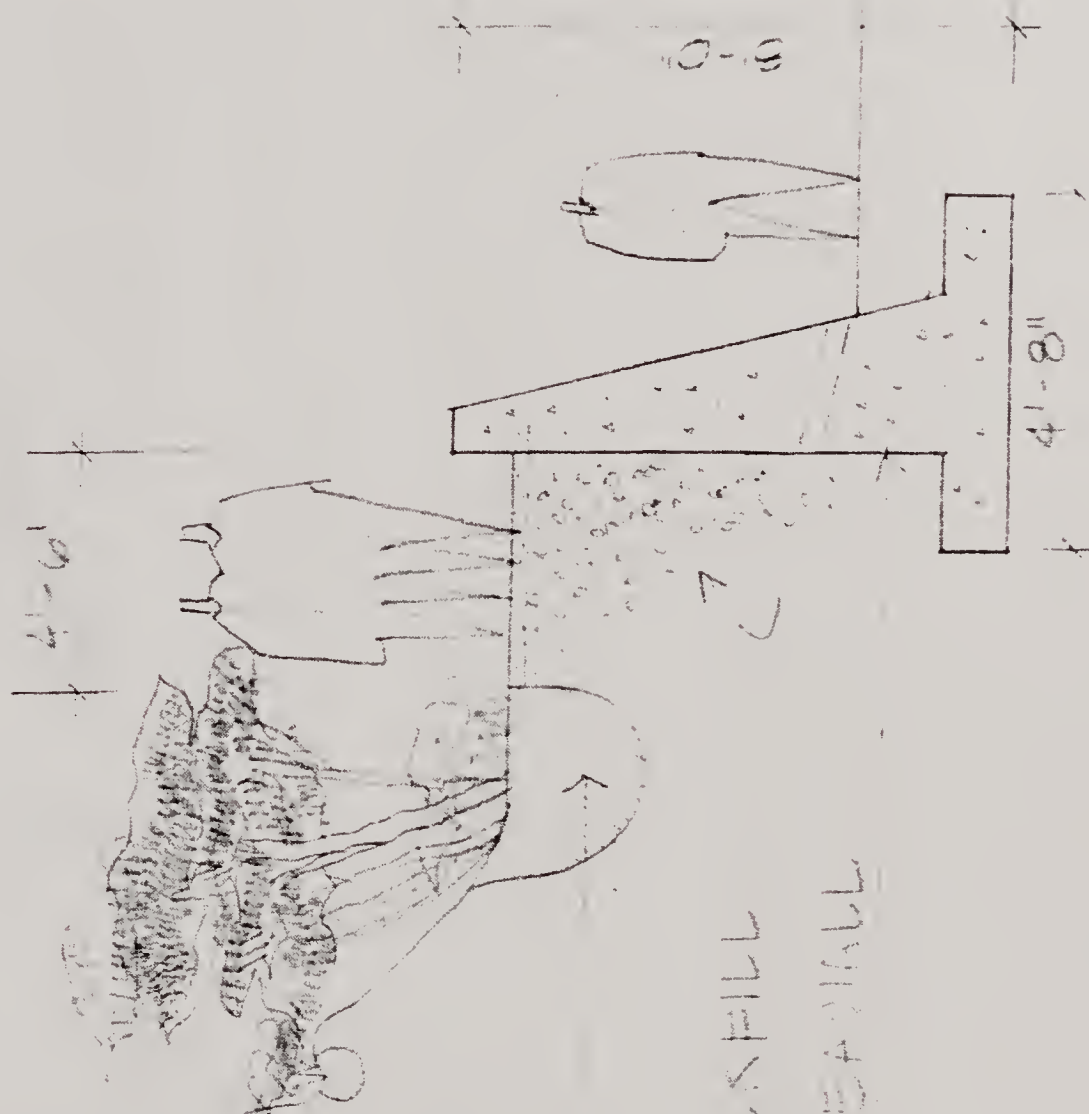
The building of seawalls and revetments has received some attention in this report as a means of retarding the natural forces of erosion. Each case of erosion on the Harbor Islands is distinct and would require further, more detailed study than that within the scope of this Plan. In several cases the very excellent cut granite seawalls, constructed in the mid 1800's are in need of repair. These repairs should be done as soon as possible or extensive damage to the Islands may occur. The plans have indicated general areas on the major Islands where erosion is severe and protection appears necessary and desirable. The selection of these areas has included considerations of the size and use of the Island and its value for the total Park System. In all cases the benefits have surpassed the costs of providing the protection. This is, of course, subject to more rigorous analysis of both the costs and benefits.

The designs of the protective seawalls should be compatible with the natural character and use of the Islands. Access to the beach areas below the seawalls should be provided and the top of the wall or rip-rap berm should accommodate walking trails and not block views.

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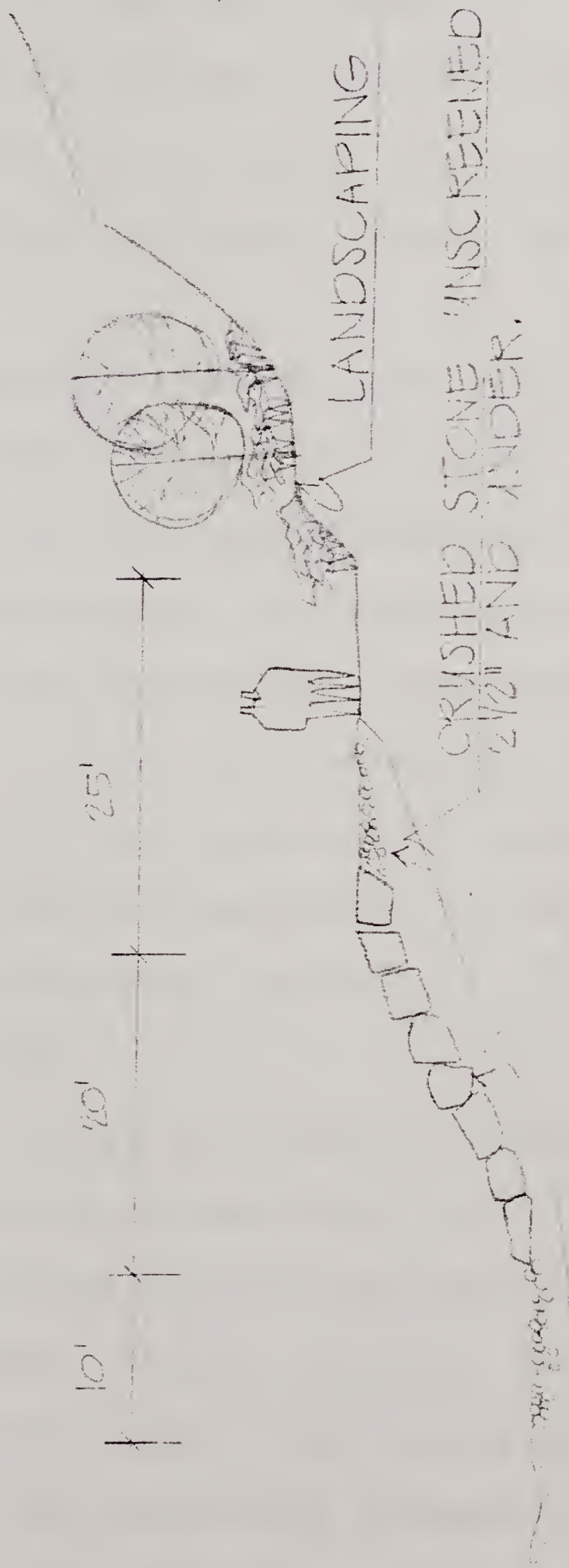
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三、四、五、六、七、八、九、十、十一、十二、十三、十四、十五、十六、十七、十八、十九、二十、二十一、二十二、二十三、二十四、二十五、二十六、二十七、二十八、二十九、三十、三十一、三十二、三十三、三十四、三十五、三十六、三十七、三十八、三十九、四十、四十一、四十二、四十三、四十四、四十五、四十六、四十七、四十八、四十九、五十、五十一、五十二、五十三、五十四、五十五、五十六、五十七、五十八、五十九、六十、六十一、六十二、六十三、六十四、六十五、六十六、六十七、六十八、六十九、七十、七十一、七十二、七十三、七十四、七十五、七十六、七十七、七十八、七十九、八十、八十一、八十二、八十三、八十四、八十五、八十六、八十七、八十八、八十九、九十、九十一、九十二、九十三、九十四、九十五、九十六、九十七、九十八、九十九、一百。



RETAINING STRUCTURE and EROSION CONTROL BOSTON HARBOR ISLANDS

RETAINING STRUCTURE - RIPRAP WALL BOSTON HARBOR ISLANDS



SLOPE 1 ON 2 - RIPRAP 1000
6000 LBS. THICK W/ ONE
LAYER STONES.

RIPRAP 1000 LBS.
THICK

LANDSCAPING

The plans for the Harbor Islands have identified several types of landscape treatment, including selective clearing of underbrush, planting for erosion control, shade tree planting, screen and windbreak planting, and planting for wildlife habitat improvement.

It is important to recognize the unique qualities of the seashore environment offered by the Harbor Islands. The preservation and enhancement of these special qualities require a sensitivity to this natural resource. It affords the people of the Commonwealth rare opportunities for aesthetic, recreational and educational experiences. For this reason recreational development should be accompanied by an active conservation management program, emphasizing a cautious understanding of the possible effects on the various interdependent habitats.

SELECTIVE CLEARING

A program of selective clearing of underbrush and thinning of young saplings is recommended on several islands. Dense sumac, poison ivy, and young saplings have overgrown many islands as part of a natural process of plant succession from open fields to young and finally mature forests. Some recreational uses, views, walking trails, and conservation management programs justify clearing of carefully selected areas of brush and trees. Where possible, established trails should be improved before disturbing brush areas to build new trails. In all cases the possible effects of clearing should be considered before such changes are made.

PLANTING FOR EROSION CONTROL

Erosion of the banks on the drumlins of the Harbor Islands is very common. Planting of these banks with certain ground covers, grasses or easily rooting vines and creeping shrubs, is an important means of helping to prevent this erosion. The plants should be vigorous growing species, which root along procumbent (trailing on the ground) stems on the surface or with underground stolons or runners. Both types of growth tend to hold the soil and keep it from eroding in storms. Soil type, soil moisture, steepness of the bank, and the urgency of stopping erosion all govern the type of plant selected and the planting distances to be used.

SHADE, WINDBREAK AND SCREEN TREE PLANTING

The plans indicate shade trees in a variety of areas which would be used for the passive enjoyment of nature, for picnicking sites, for camping sites, and around buildings and other intensively used facilities. Deciduous trees offer the advantage of providing shade during the summer months and allowing maximum sun penetration in the winter after the leaves have fallen.

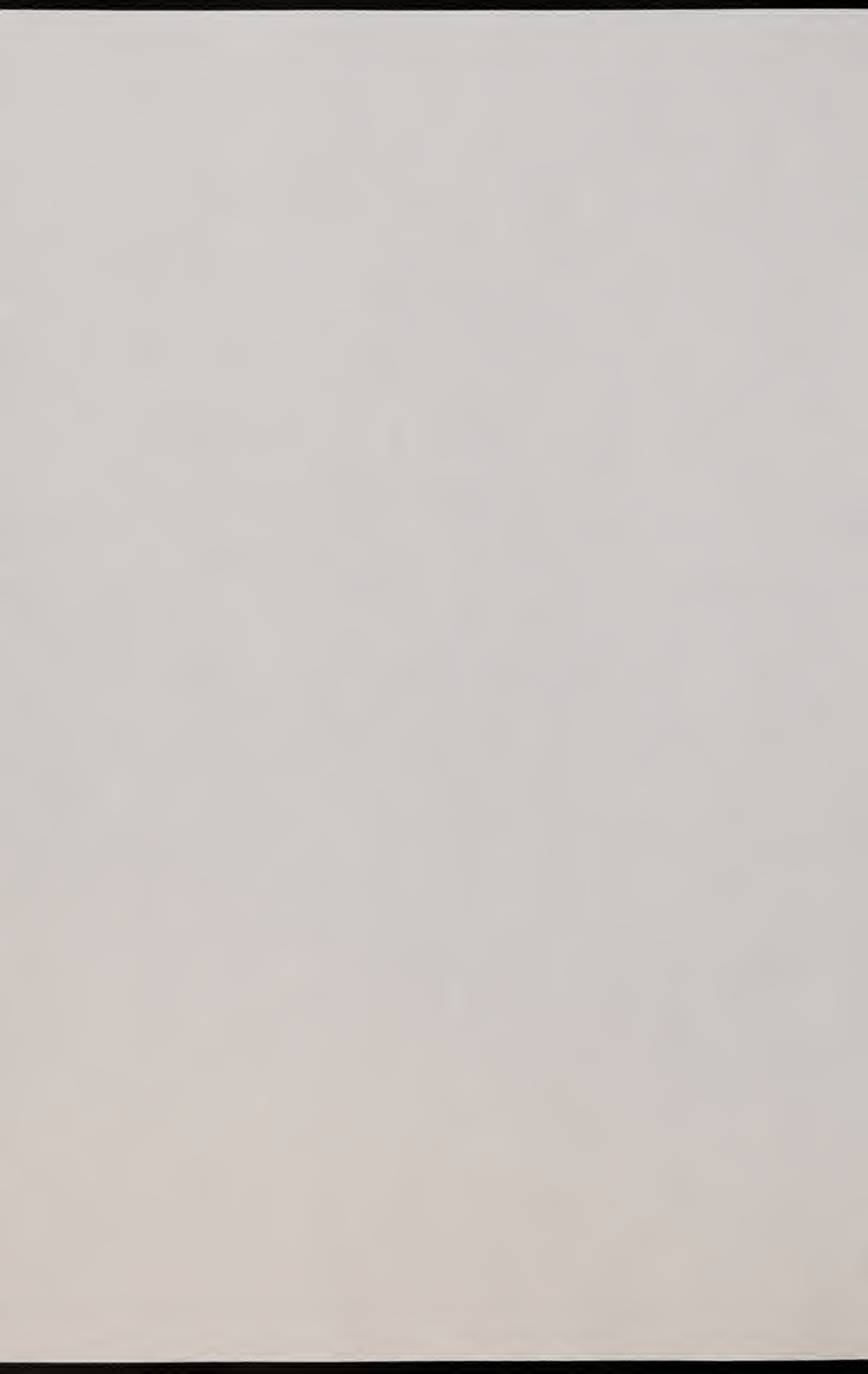
Trees are also recommended for windbreaks, especially around open exposed areas such as playfields, and on the north and northeast sides of various facilities. Evergreen trees, with their relatively dense year-round foliage, provide good windbreaks. A combination of a majority of deciduous trees planted on the

south side of trails and other facilities and a majority of evergreen trees on the northern side can provide the advantages of shade in summer, sun in winter and wind protection from the harsh northerly winds of the winter.

Screen trees, mostly evergreens, and other screen plants such as bush shrubs are indicated on the plans for a variety of purposes, including the assurance of privacy, screening unattractive facilities, and isolating one use from an adjacent, incompatible use. One picnic table or campsite can seem relatively private and isolated from adjacent facilities by the careful provision of screen planting. A variety of shrubs are also especially attractive as a means of softening the lines of buildings and helping them appear more as a part of the Islands' natural environment. Several varieties of shrubs are also desirable for their contribution to the visual quality of the Harbor. These include flowering shrubs and varieties selected for their fall foliage.

PLANTING FOR WILDLIFE HABITAT IMPROVEMENT

All wildlife need food and cover. To adequately support wildlife, there should be a plentiful year-round supply of food close to cover which furnishes protection from predators and weather.



HARDWOOD WOODLOT

CONIFER WOODCREEK

WOOD EDGE

FOOD PLOT - ALFALFA, CLOVER, GRAINS

SHRUB HEDGEROW

HAYFIELD, NESTING COVER,

LOAFING SPACE, INSECT FOOD

WINTER FOOD, TREE

SHRUBS W/ FRUIT

40'

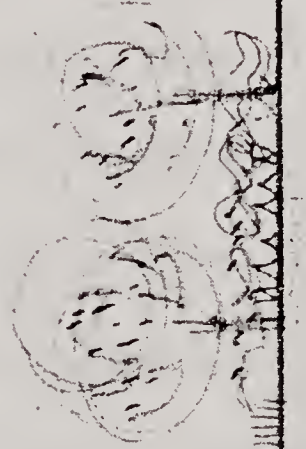
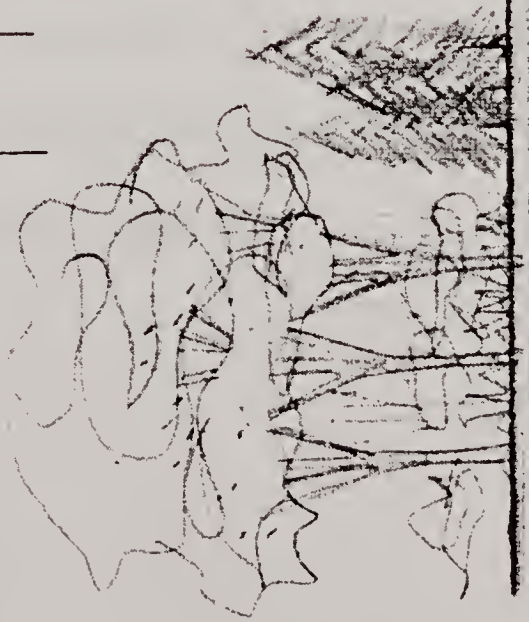
10'

10'

10'

35'

30'



WILDLIFE MANAGEMENT AREA
BOSTON HARBOR ISLANDS

MANAGEMENT SECTION

SCALE 1" = 20'-0"

* WILDLIFE HABITAT IMPROVEMENT, DIVISION OF
FISHERIES AND GAME, MATTHEW B. CONNOLLY, ET AL.



Wild fruits, insects, aquatic animals, grains, nuts, and green plants will generally provide an ample supply of food for some birds and small mammals from late spring to late fall. Food becomes scarce in winter and early spring. Shrubs that keep nuts and berries into the winter and remain above the snow cover, and other cover plantings that protect such natural food sources as grasses and grains, are important winter food sources.

Birds and small mammals need several kinds of cover to conceal nests, to provide shade from the hot sun, to provide shelter from chilling rains, to allow escape from enemies, and to protect against snow, cold and wind in winter. Grasses, weeds, and other low growing plants provide mating and roosting areas for some species; dense or thorny shrubs provide protection from predators and spots for nesting and loafing; and clumps of evergreen or other tall dense growth provide cover for winter protection. Selective cutting in a wooded area allows the penetration of sunlight, promoting the growth of succulent grasses, shoots and weeds attractive to some wildlife.



Open fields can be improved as a wildlife habitat by increased tree and shrub plantings to provide a variety of cover and food. Nesting cover and food for birds can be created by surrounding windbreaks and screen tree clumps with fruit producing shrubs, and loafing space and cover for ground nesting birds can be provided by the planting of grasses and grains, which will attract insect populations creating an additional source of food for birds. The combination of grasses, shrubs, and screen trees in a confined area creates a hedgerow between woodland cover and field feeding areas.

In addition to plantings, access to small bodies of water, marshes, and mud flats is an important element for attracting wildlife. Waterfowl and wading birds are dependent upon shallow water areas to feed and loaf. Existing marshes may be improved by selective planting. The careful dredging of portions of some marshes may increase the productivity and variety of plants and animals. Wildlife areas should be separated by screen planting and distance from incompatible uses. Birds and other wildlife need privacy, especially during the nesting season. Paths and nature walks should be close enough to wildlife areas for vantage points but not so close that wildlife will be disturbed.*

*Additional information on landscape treatment, including plant materials for seashore conditions, erosion control, and wildlife habitat improvement is included in the Boston Harbor Islands Comprehensive Plan, Appendix, p. 148, Metropolitan Area Planning Council, Boston, Massachusetts, October, 1972.

COMFORT STATIONS

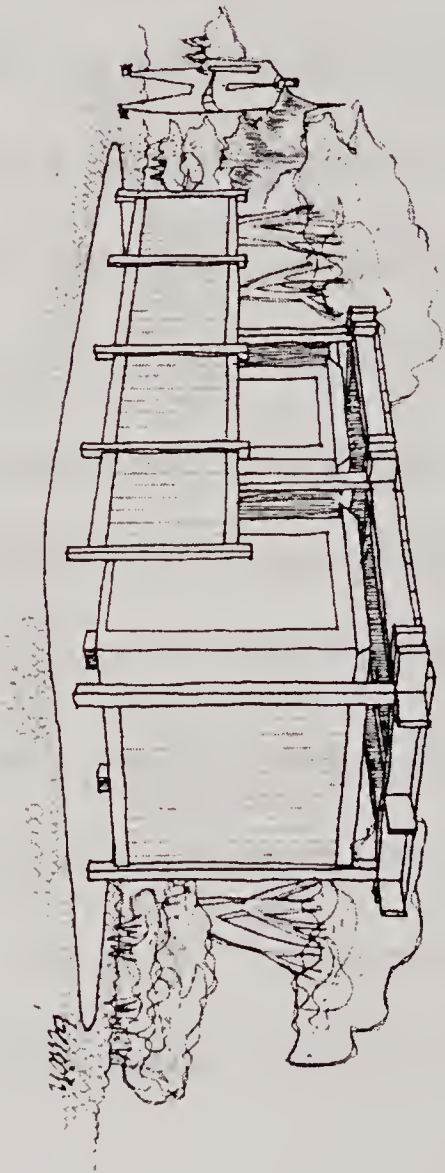
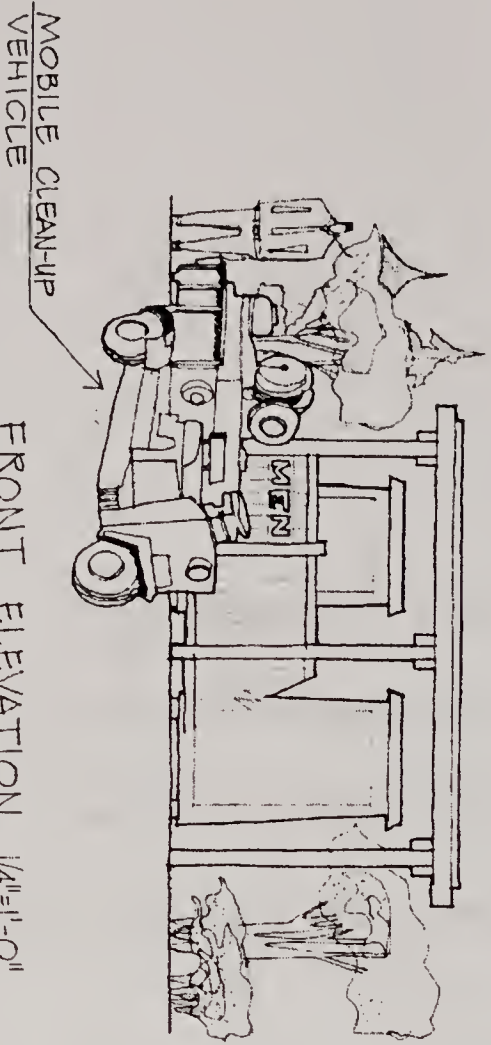
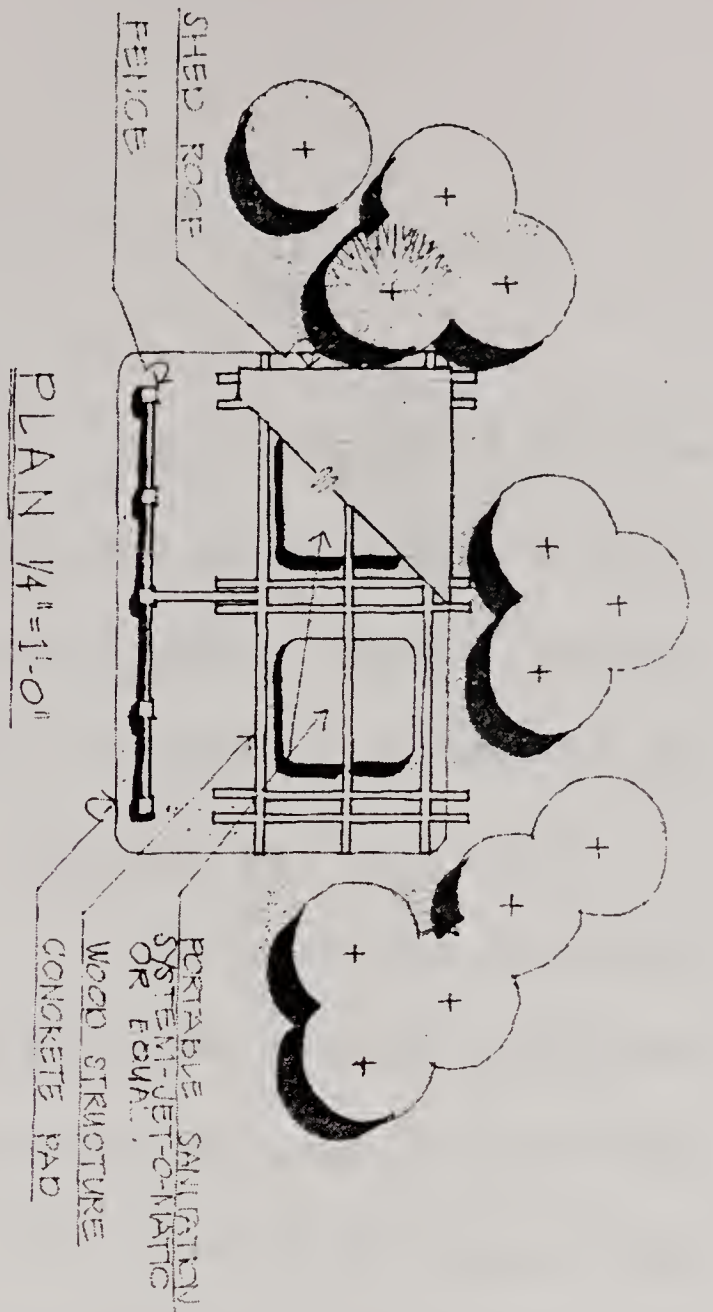
Three types of comfort stations have been identified by the Island plans -- large comfort station/bathhouse combinations; smaller comfort stations; and chemical toilets.

The larger comfort station/bathhouse combinations are generally located adjacent to the largest swimming beaches or group camping sites and consist of two sets of rest rooms, each provided with shower stalls. The size of each facility varies with the number of persons it is intended to serve. Each comfort station/bathhouse combination is provided with hot and cold running water and a septic system or is connected with a larger sewage treatment system.

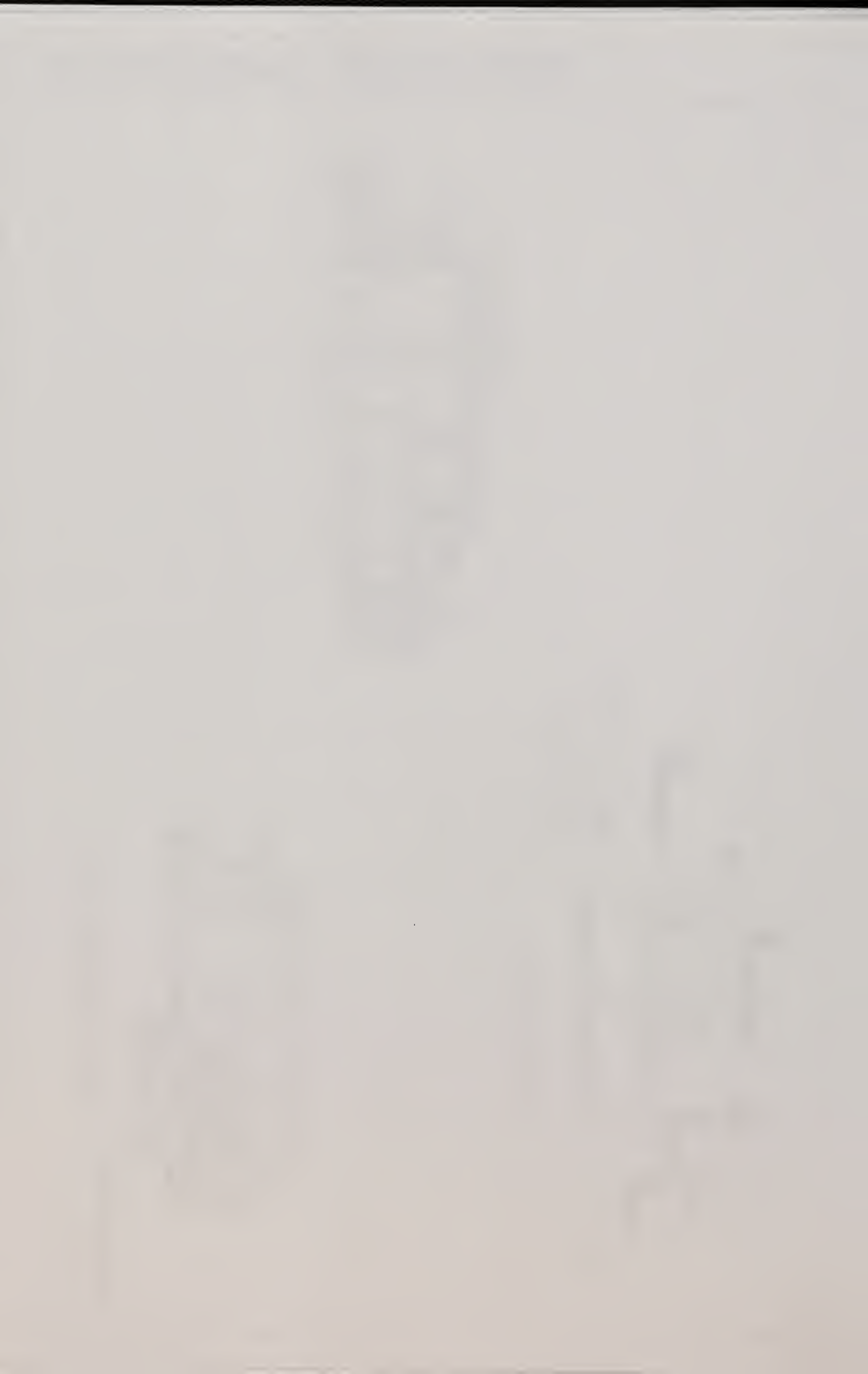
Comfort stations without bathhouses are provided in several intensively used locations away from large beaches and camping complexes. These facilities consist of two sets of rest rooms and are also provided with running water and sewage disposal systems.

The location of the comfort stations has been based on tentative considerations of surficial drainage and topography. Final location will depend on further analysis and detailed engineering studies of subsurface soil drainage.





COMFORT STATION



Chemical flush toilets, attractively housed in a specially designed comfort station, provide an excellent means of providing public sanitation facilities in less intensively used areas or in locations that are not suitable for septic tank construction. Public demand for good self-contained sanitation facilities, as a way of reducing pollution problems, has resulted in dramatic changes in the quality and efficiency of chemical toilets. New self-contained, recirculating, flushing toilets provide a 99% decrease in fresh water requirements because they filter, chemically treat and re-use the same water to flush the bowl. Such facilities are currently being used in many national parks and recreation areas. They are attractively designed for public use and easy service and maintenance. They also provide an excellent interim facility while more permanent comfort stations are being constructed.

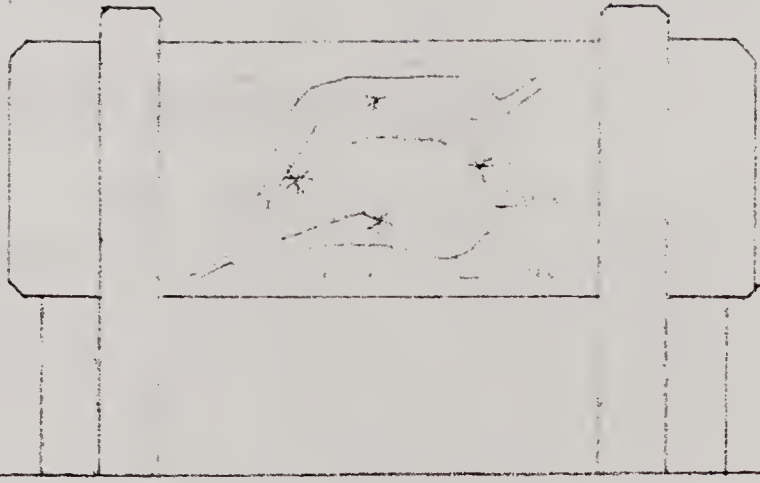
Other interim facility considerations may include the design and placement of special utility barges at the docks of some islands. Such a barge would have a water reservoir, chemical toilets, and a power generator, providing good flexibility, mobility, and security.



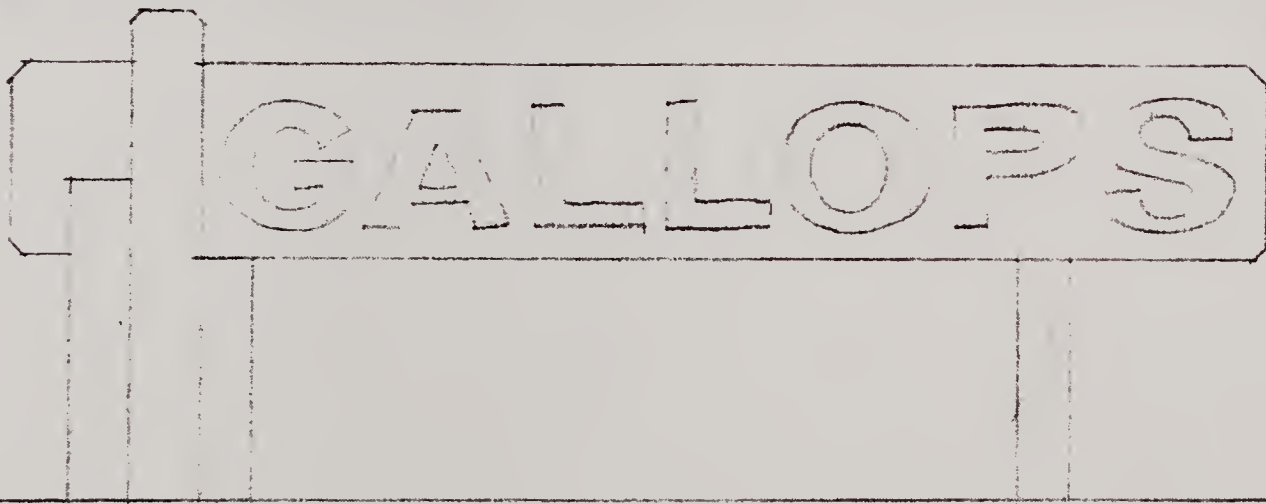
INTERPRETIVE MARKERS

Markers or signs are indicated on many of the Island plans to give information on the history and ecology of the Islands. Such markers should be compatible with their surroundings. On nature trails or in other predominately natural areas markers should have a rustic appearance and be made of natural materials, including stone and wood. Markers on buildings or in some historic areas might appropriately utilize more durable man-made materials, such as metal plaques.

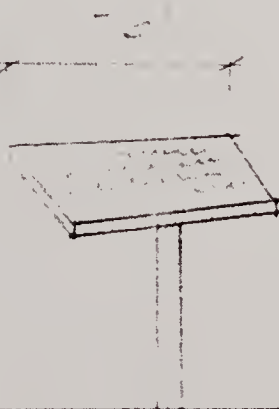
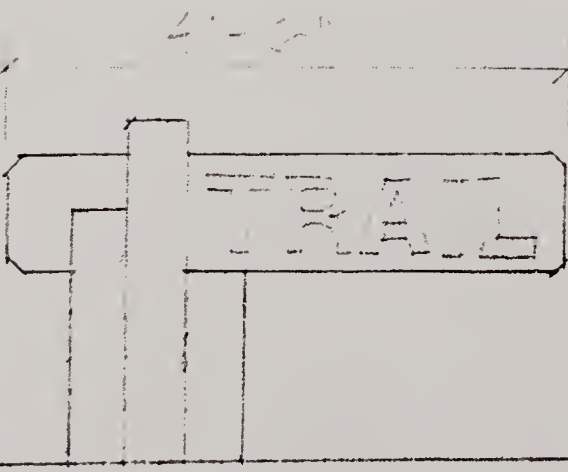
Interpretive centers in natural areas on some islands incorporate a shelter with markers, maps and other descriptive information. These shelters are located at the beginning of several nature walks through wildlife sanctuaries and in other areas with special environmental features.



INTEREST SIGN 10'-0"



SPEED SIGN 10'-0"



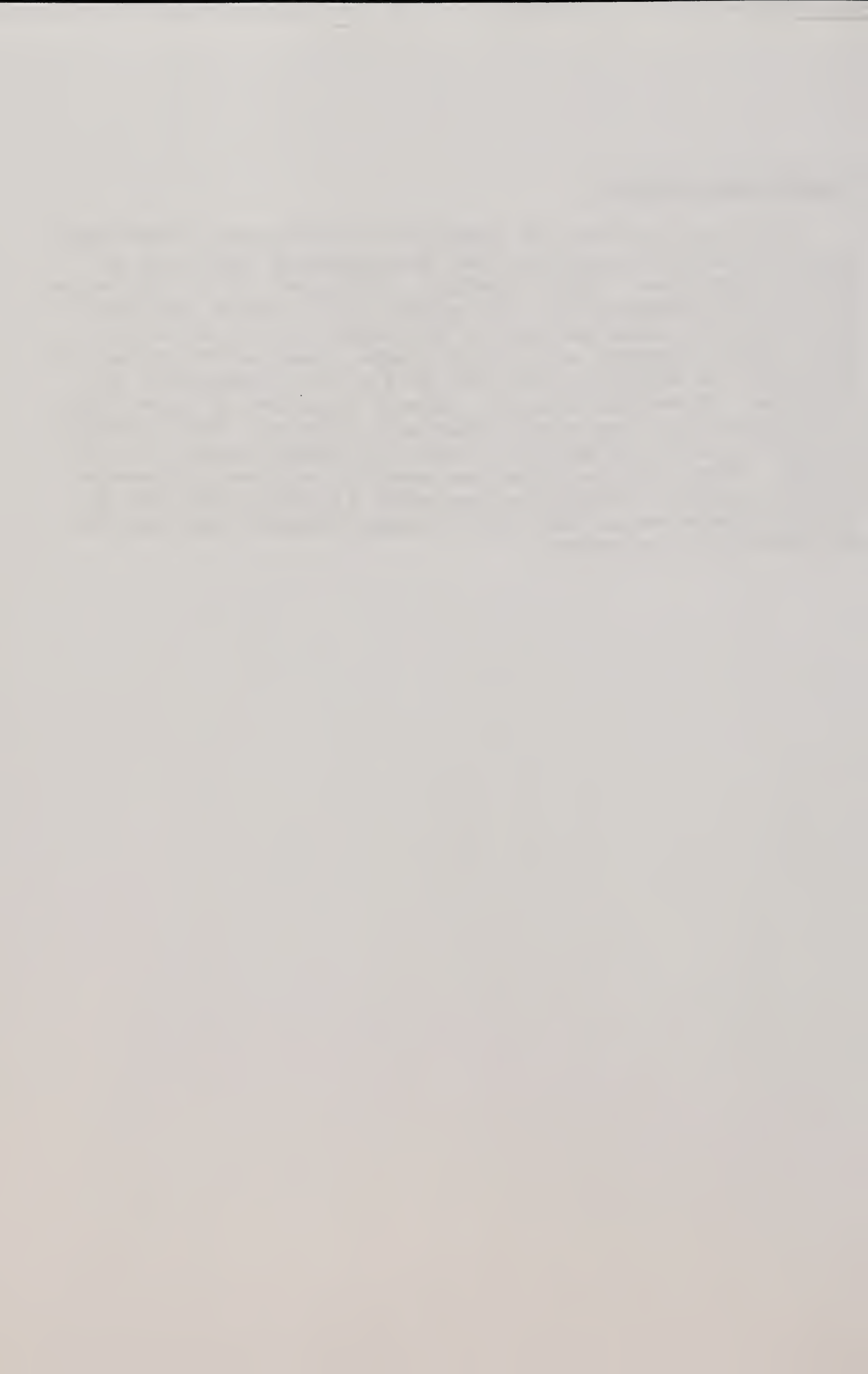
MARKERS AND POINTS OF INTEREST

ISLAND SIGN DETAILS
BOSTON - REBOR ISLANDS



ISLAND ADMINISTRATION

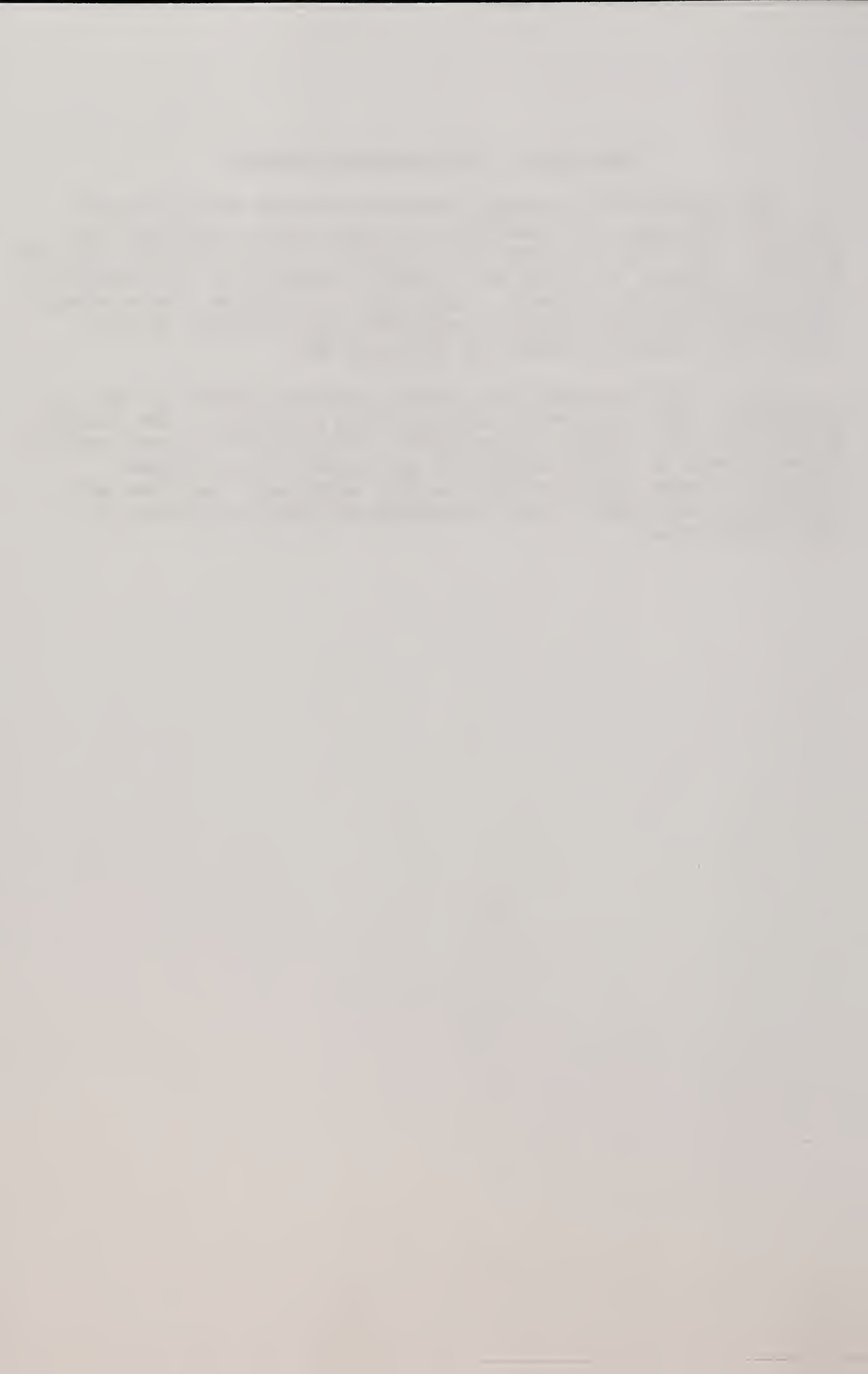
The administration and operation of the Harbor Islands Park System is clearly placed with the Massachusetts Department of Natural Resources. Other important participants in the operation of the Park System include the Metropolitan District Commission, the cities and towns surrounding the Harbor, and a variety of other public agencies and private groups. Many of the details of operation and administration will have to be determined by the Department of Natural Resources through a process of cooperation with the various responsible agencies and groups. The following description will tentatively discuss the administration of each Island. These considerations are based on numerous conferences with the parties involved and represent a general consensus of island administration that may be further detailed and modified by inter-agency agreements.



LONG, MOON, AND RAINSFORD ISLANDS

The Department of Natural Resources should take the major role in developing the facilities at Long, Moon, and Rainsford Islands. The City of Boston has expressed their continued interest in these Islands, but lack the financial capability for initiating major construction projects. Therefore, appropriate inter-agency agreements involving lease arrangements and financial support should be developed between the City and DNR.

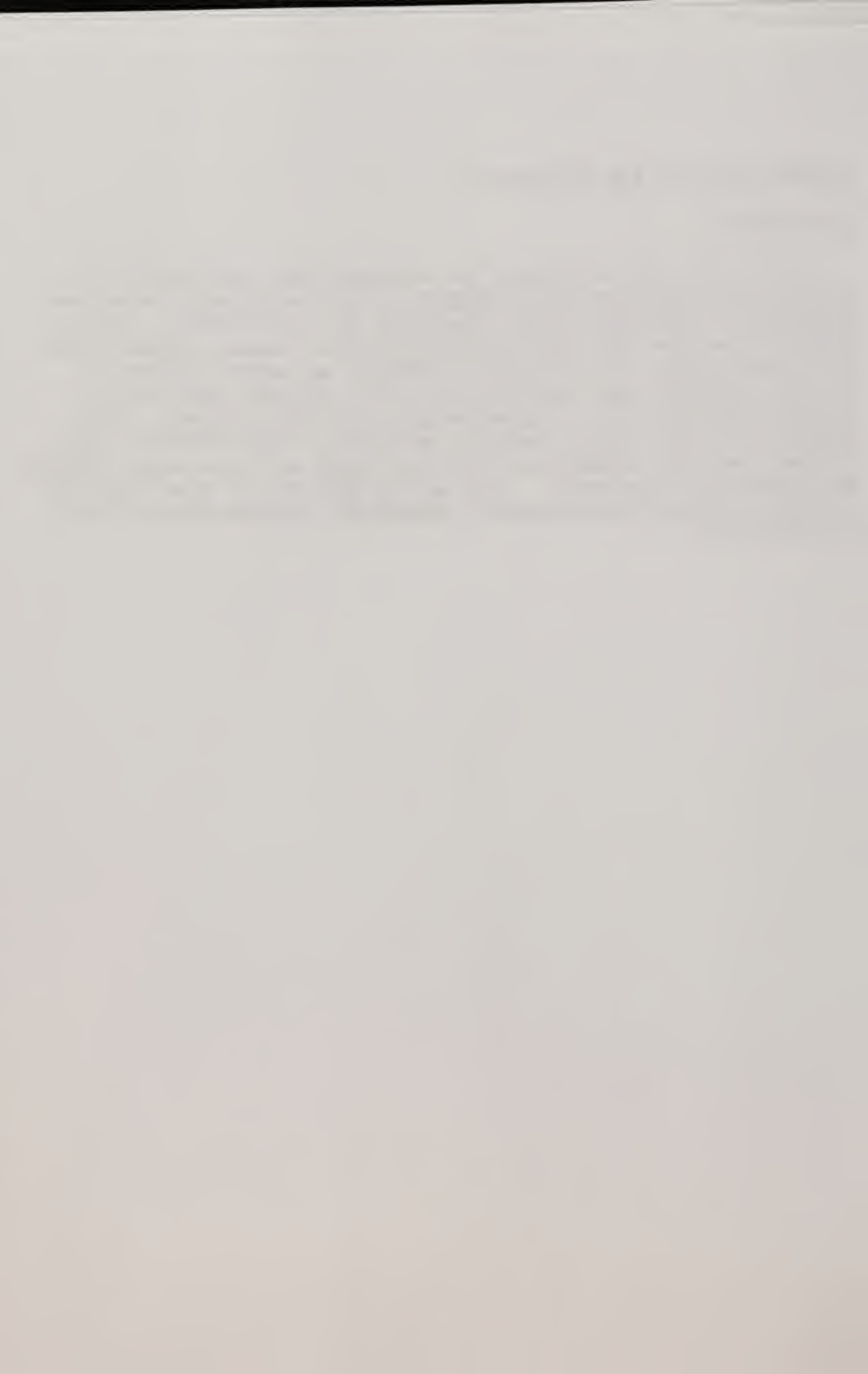
Long Island provides the logical base for access to the Islands for DNR maintenance and operating personnel. The Island, located near the center of the Harbor, has mainland access and the highest level of ferry service of any Island in the Harbor. Adequate storage space for maintenance equipment, supplies and a workshop is available in the remaining military structures at Long Island Head.



SUMMARY OF COSTS AND PRIORITIES

Introduction

The costs and priorities for achieving the recreation and conservation purposes of the Harbor Islands Legislation have been developed in conjunction with the plans for each Island. Direct capital costs for the construction of piers, trails, picnic areas, small boat docks, landscaping, buildings, and other facilities for the enjoyment and construction of the Islands' man-made and natural resources total approximately 27 million dollars. This figure is derived from a detailed analysis of each Island's plan. However, any cost estimates, which are based on large scale designs, are necessarily tentative. They are subject to the more rigorous studies of costs to be conducted during the implementation of the general plans.



Priorities and Phasing

The expenditure of limited funds for any project can best be made according to a fairly detailed time schedule of development that is based on a system of priorities. While a detailed time schedule aids in ordering the implementation of a project, flexibility in many of the work elements will permit changes when special, unforeseen opportunities or difficulties are discovered.

Three time periods or phases have been used to schedule costs for the Harbor Islands Comprehensive Plan. Each of these three phases has recommended projects to be started within certain specific time periods. However, the schedule is not intended to be a strict year-by-year listing of work to be completed. Instead the three phases indicate levels of priority. Phase I, 1972-1975, corresponds to projects of the first priority, Phases II, 1976-1980, and III, 1981-1990, equal second and third priorities, respectively. In several obvious cases, work begun in Phase I must be completed before Phase II projects are begun, in other cases Phase II projects may be started during Phase I or before certain Phase I projects are completed; thus, the dates and divisions between phases are relatively flexible.



Costs.

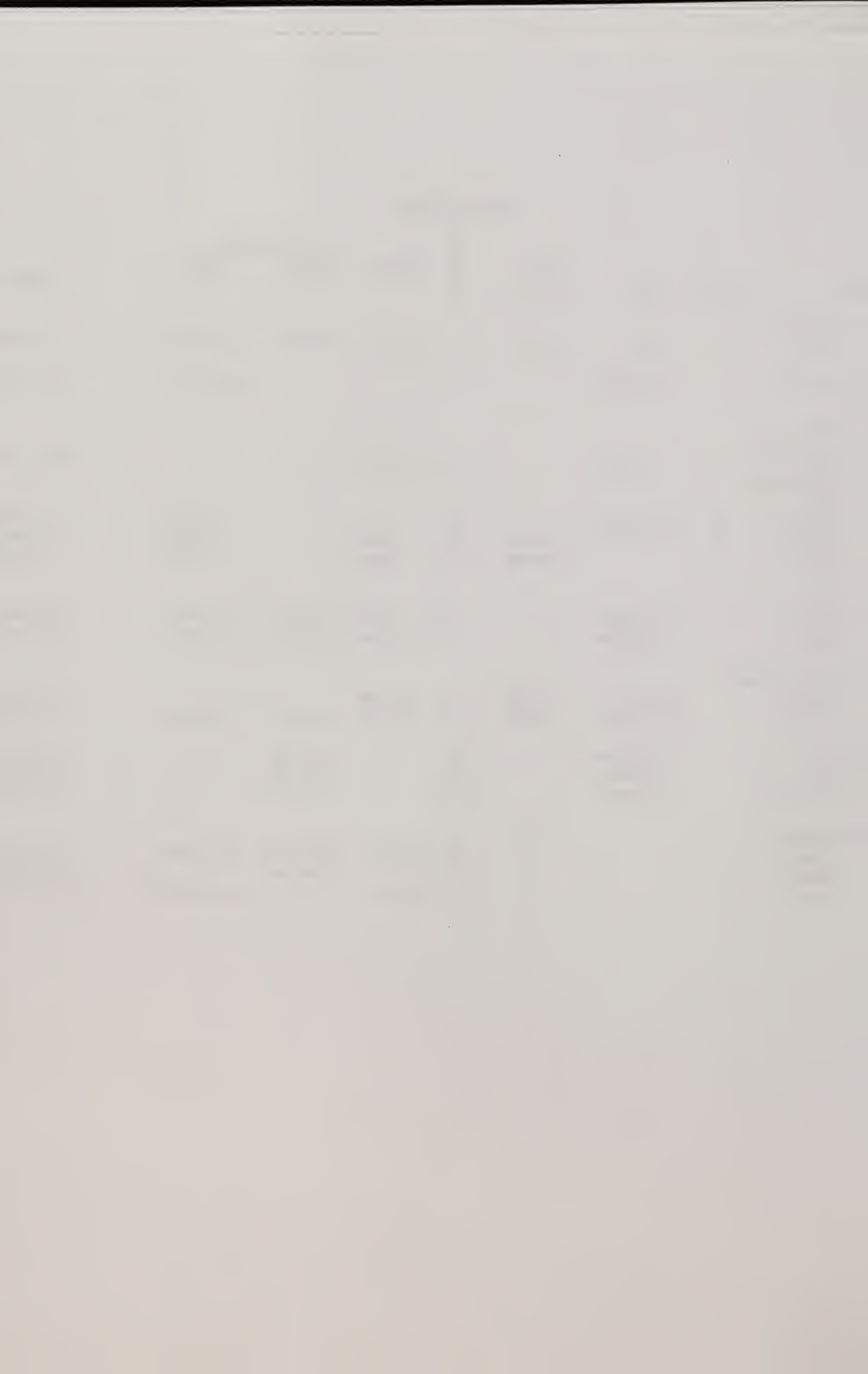
Development costs for the individual Island plans have been prepared by the MAPC from a variety of sources, including published unit cost data, current cost information from local contractors, equipment catalogues and the costs of MDC and DNR projects that are applicable to the Island plans. Actual bid prices received by the Massachusetts Department of Public Works and information from marine contractors were used to develop costs for seawall and pier construction. Costs for barge removal were obtained from the draft of the U.S. Army Corps of Engineers "Debris Removal Study" and from information provided by marine contractors. Costs for transportation of material and workmen were obtained from various marine transport companies working in the Harbor.

Fortification Renovation.

The renovation and restoration of the various historic forts in Boston Harbor presented a special cost estimation problem. While these structures represent a major man-made resource, they show the damage of years of neglect. Costs for their renovation were based on several assumptions. It was assumed that full restoration or renovation would be reserved for the most significant of the forts while limited steps would be taken at the majority of the sites. Limited renovation would include only such measures as would be necessary to render the forts safe and arrest the forces of decay. Additional more detailed cost estimates would be prepared during the implementation of the comprehensive plan for each island fort. On the basis of these assumptions two levels of cost were estimated. The first cost is for limited renovation, necessary to render the forts safe. This cost was based on published unit cost data and rough estimates of the number of units needing renovation at each fort. The second cost is for full renovation and was based on MDC experience on George's Island.

LONG ISLAND

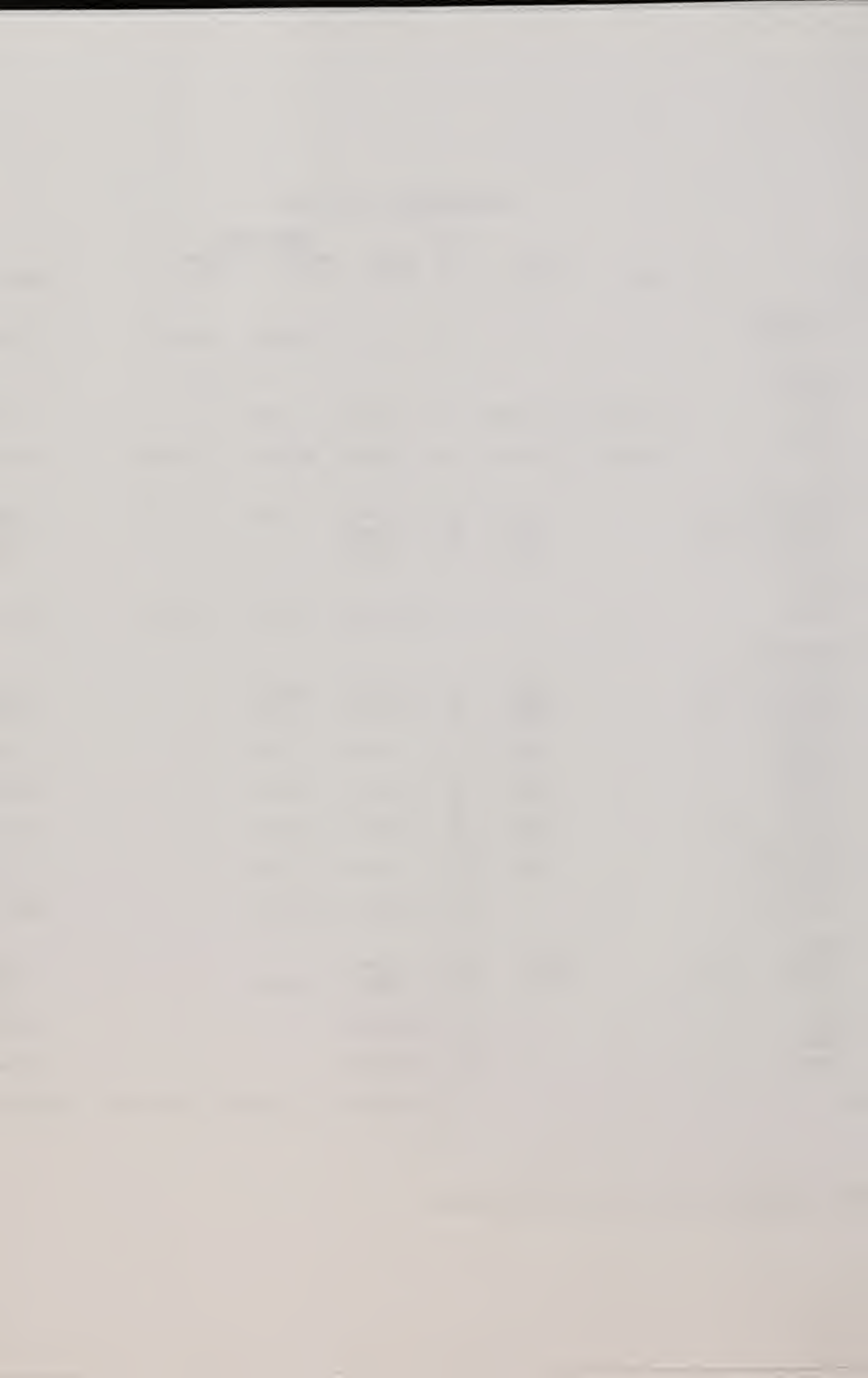
ITEM	NO.	UNIT	UNIT COST \$	FACTOR	TOTAL COST			TOTAL
					PHASE I	PHASE II	PHASE III	
1. Clear & Grub		30A	830/A	53	41,394	16,524	24,870	82,788
4. Seawall		4,215LF		15			994,129	994,129
5. Pier								
E. Head								
18'w.	1	400LF		15	102,350			102,350
Hospital								
Pier								
Repair	1	14,650SF		15			30,360	30,360
Float	6		1700EA	15	5,865		5,865	11,730
Ramp	2		1300EA	15	1,495		1,495	2,990
6. Roads								
Demol.		14,100LF		15	9,580	36,420	23,000	69,000
Cont.		9,500LF		15	427,420	18,205	31,625	477,250
7. Paved Areas								
Demol.		13,067	1/SY	15	13,800			13,800
Const.		126,600SF	.60/SF	15	16,388	50,485	20,413	87,286
8. Water		3,000LF		53		26,806		26,806
Sewer		3,000LF		53		154,867		154,867
Electric		3,000LF		53		27,112		27,112
9. Building								
Demol.				25	150,013	225,844	413,138	788,995
Rehab.				50		96,000		96,000
Const.					601,150		1,075,000	1,676,150



LONG ISLAND (Continued)

ITEM	NO.	UNIT	UNIT COST \$	FACTOR	TOTAL COST			TOTAL
					PHASE I	PHASE II	PHASE III	
10. Grading & Seeding				53		276,436	513,381	789,817
11. Trails								
Unpav.								
6'		21,100LF	67/100LF	25	13,420	670		14,090
Paved								
8'		20,500LF	.60/SF	25	70,330	49,355	33,520	153,205
12. Planting								
Decid.	600		40EA	53	25,245	5,738	5,737	36,720
Evergr.	400		30EA	53	18,360			18,360
Shrubs	150		10EA	53	2,295			2,295
13. Fort Renov.				53	232,988	77,663	77,663	388,314
14. Equipment								
Picnic								
Table	154		100EA	50	13,800	9,300		23,100
Benches	80		200EA	50	15,000	9,000		24,000
Trash								
Cont.	75		10EA	50	675	450		1,125
Drink.								
Fount.	14		700EA	50	10,500	4,200		14,700
Fire-								
pl.	104		120EA	50	16,560	2,160		18,720
Fish Cl.								
Facility	2		500EA	50	750	750		1,500
Play-								
ground				50	61,888	93,412		155,300
15. Signs								
Large	2		3,000	25	7,500			7,500
Small	32		200	25	4,900	3,100		8,000
17. Pool				15	460,000			460,000
Boat								
Ramp				15	126,960			126,960
TOTAL					2,450,626	1,184,497	3,250,196	6,885,319

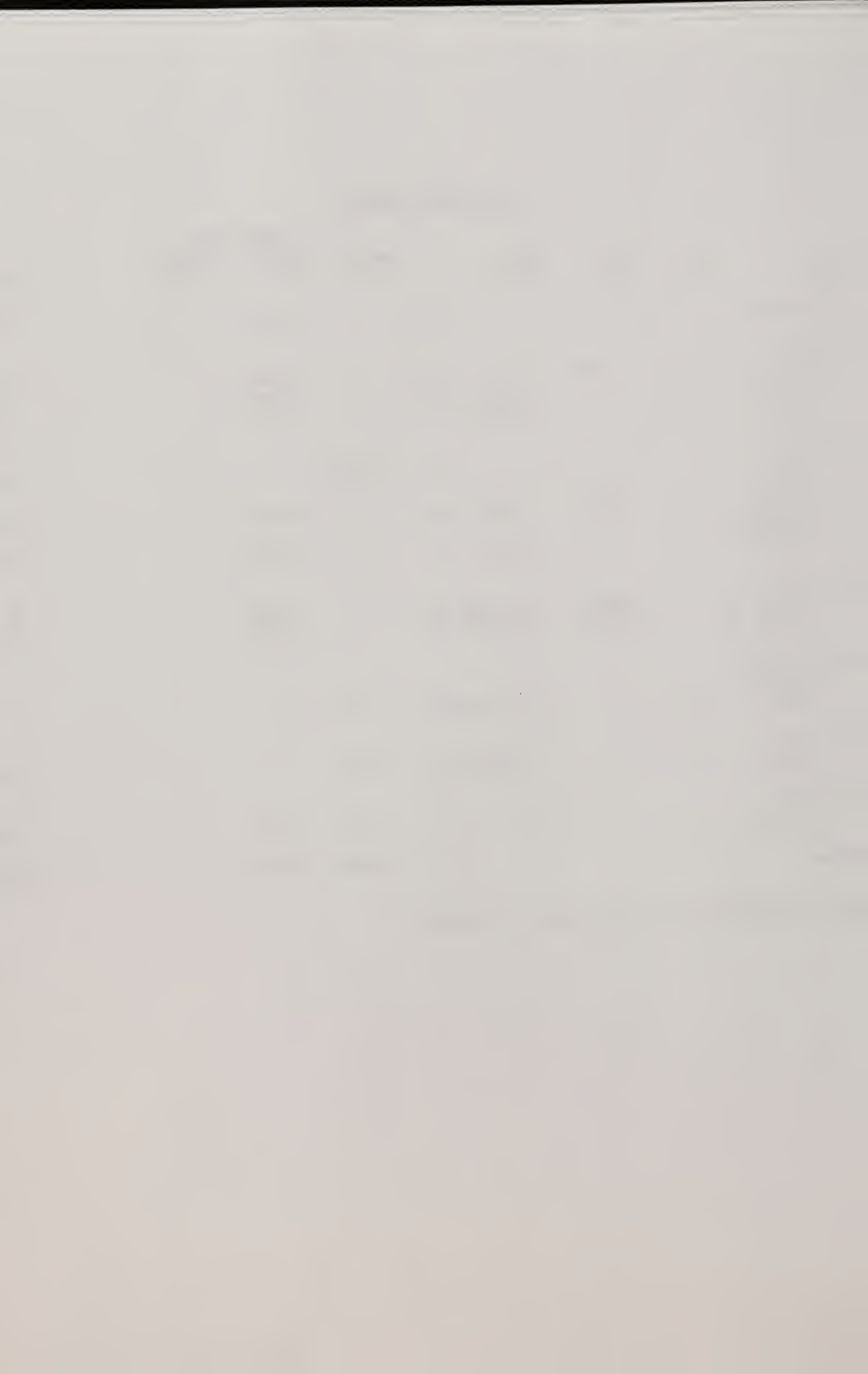
NOTE: Figures may not total due to rounding.



RAINSFORD ISLAND

ITEM	NO.	UNIT	UNIT COST \$		PHASE I	TOTAL COST		TOTAL
						PHASE II	PHASE III	
4. Seawall				15		70,058		70,058
5. Pier								
10'w.		60LF		15		10,235		10,235
Float	1		1700EA	15		1,955		1,955
Ramp	1		1300EA	15		1,495		1,495
9. Bldg.								
Demo.				25	3,375			3,375
Const.								
Shelter	1	800SF	10/SF	25		10,000		10,000
Chemical Toilet	1		5500EA	25		6,875		6,875
11. Trails								
Unpav. 3'		3000LF	33/100LF	25		1,238		1,238
Unpav. 6'		1200LF	67/100LF	25		1,007		1,007
14. Equipment								
Trash Cont.	5		10EA	50	75			75
15. Signs								
Large	1		3000EA	25	3,750			3,750
16. Trans. to Isl.					4,725	4,725		9,450
TOTAL					11,925	107,587		119,512

NOTE: Figures may not total due to rounding.



BENEFITS

No discussion of the costs of a large recreation and conservation program would be complete without some mention of the benefits to be derived from the expenditure. It must be admitted from the outset that the means of estimating economic benefits of such intangible activities as recreation and the enjoyment of the natural environment are relatively crude. However, a recent report* by the Federal Water Resources Council has provided a number of economic evaluations for water-related recreation activities. These evaluations have been based upon a variety of approaches which measure the hypothetical willingness of the consumer to pay for recreational activities. They are expressed in terms of unit values for a typical outdoor recreation day. The Island plans and transportation services have been designed to allow estimation of numbers of recreation days for each island activity. The accompanying chart presents the Island-by-Island estimates of annual economic benefits based upon the type of recreation activity.

It must be noted that the above evaluation does not include many of the important, but more difficult to assess values associated with the plans. For example, it does not include the economic value of conserving the various salt-marshes or the economic effect of a recreation day on the productivity of the person who is recreating. While these factors are more difficult to evaluate they are just as important and sometimes more so than the data presented.

*Federal Water Resources Council, "Standards for Planning Water and Land Resources," July, 1970.



ECONOMIC BENEFITS OF ISLAND RECREATION

<u>ISLAND & TYPE OF ACTIVITY</u>	<u>NUMBER OF ANNUAL RECREATION DAYS</u>	<u>VALUE/DAY*</u> <u>(ESTIMATE)</u>	<u>ANNUAL VALUE</u> <u>(ESTIMATE)</u>
Long - Phase 3 (Maximum Daily Use - 3,000 Persons)			
Historic Fort			
Visitation	75,000	\$5.00	\$ 375,000
Play	150,000	3.00	450,000
Fishing	20,000	2.00	40,000
Picnicking	100,000	2.00	200,000
Group Camping	20,000	4.00	80,000
Swimming	100,000	3.00	300,000
Hiking, Nature			
Walks, etc.	50,000	2.00	100,000
Boating	25,000	6.00	150,000
			\$1,695,000

*The values in the Water Resources Council Document are presented within ranges under two categories, one for "general" recreation days and one for "specialized" recreation days. Because of the uniqueness of the Boston Harbor Islands general recreation values have been slightly increased depending on island uniqueness, a specific value, rather than a range, was assigned to each activity.

THE UNIVERSITY OF CHICAGO

NAME	DEGREE	CLASS	DATE
ALLEN, JOHN	B.A.	1901	1901
ANDERSON, JAMES	B.A.	1902	1902
BROWN, ROBERT	B.A.	1903	1903
CLARK, WILLIAM	B.A.	1904	1904
DAVIS, HENRY	B.A.	1905	1905
EDWARDS, GEORGE	B.A.	1906	1906
FISHER, EDWARD	B.A.	1907	1907
GILBERT, ALFRED	B.A.	1908	1908
HARRIS, CHARLES	B.A.	1909	1909
JONES, THOMAS	B.A.	1910	1910
KELLY, JOHN	B.A.	1911	1911
LEWIS, ROBERT	B.A.	1912	1912
MARTIN, WILLIAM	B.A.	1913	1913
MILLER, EDWARD	B.A.	1914	1914
MURPHY, JAMES	B.A.	1915	1915
NICHOLS, ROBERT	B.A.	1916	1916
OLIVER, WILLIAM	B.A.	1917	1917
PETERSON, JOHN	B.A.	1918	1918
ROBERTS, WILLIAM	B.A.	1919	1919
SMITH, ROBERT	B.A.	1920	1920
STEWART, WILLIAM	B.A.	1921	1921
TAYLOR, JOHN	B.A.	1922	1922
WALKER, WILLIAM	B.A.	1923	1923
WATSON, JOHN	B.A.	1924	1924
WELLS, WILLIAM	B.A.	1925	1925
WHITE, JOHN	B.A.	1926	1926
WILSON, WILLIAM	B.A.	1927	1927
WYATT, JOHN	B.A.	1928	1928
YOUNG, WILLIAM	B.A.	1929	1929

ECONOMIC BENEFITS OF ISLAND RECREATION

<u>ISLAND & TYPE OF ACTIVITY</u>	<u>NUMBER OF ANNUAL RECREATION DAYS</u>	<u>VALUE/DAY* (ESTIMATE)</u>	<u>ANNUAL VALUE (ESTIMATE)</u>
Rainsford (Maximum Daily Use - 40 Persons)			
Swimming	2,000	\$3.00	\$6,000
Picnicking	3,000	2.00	6,000
Boating	300	6.00	1,800
Hiking, Nature Walks, etc.	2,000	2.00	4,000
			\$17,800

*The values in the Water Resources Council Document are presented within ranges under two categories, one for "general" recreation days and one for "specialized" recreation days. Because of the uniqueness of the Boston Harbor Islands general recreation values have been slightly increased depending on island uniqueness, a specific value, rather than a range, was assigned to each activity.

Boston Harbor Islands
Comprehensive Plan



Peddock's Island
Support Documentation

prepared for:
Massachusetts Department of Natural Resources



by:
Metropolitan Area Planning Council

*The preparation of this report was financially
aided through a federal grant from the Land and
Water Conservation Fund Program of the Department
of Interior, Bureau of Outdoor Recreation
Project #25-00065*

March 1973

PEDDOCK'S ISLAND

Description and History. Peddock's Island consists of five drumlins, four of which are connected by long, low sandbars. While its land area of 113 acres is not the largest of the Harbor Islands, its irregular shape gives it the longest shoreline. The Island's first English settler, Leonard Peddock, arrived in 1622 with the Weston Company. The Island evidently had excellent pasture land for it is noted that during the Revolution, British raiders carried off 30 cattle and 500 sheep. After the British left the Harbor in 1776, about 600 militiamen encamped on the Island to guard against a return by English soldiers. Ownership of the Island has passed through several families; it is now owned by the Metropolitan District Commission. The Island was never divided and sold as small parcels, although there have been several tenants and farms. In the 1800's the Island was a popular summer resort and several inns were established. Around 1880, the Alger Foundry, in South Boston, maintained a test site for its large guns on Nut Island, using Prince Head as a target.

In 1897 the U.S. Government acquired the largest drumlin, (nearly 88 acres in size) at the east end of the Island to build a mortar battery. In 1900 the site was officially designated, Fort Andrews, in honor of Major General George L. Andrews, who was Professor of Languages at West Point from 1861 to 1895. Two

GRASS
SHRUBS
TREES
EROSION
BEACH
WIND DIRECTION
DIRECTION OF CURRENTS AFTER LOW
TIDE
HIGH TIDE VELOCITIES ARE IN KNOTS
TARE FOR THE TIME OF SPRING CURRENTS
WATER SUITABLE FOR MOST USE
EXCEPT BATHING & SHELLFISHING
COMPARED TO THE OTHER BOSTON
HARBOR ISLANDS. PEDDOCKS ISLAND
HAS A WIDE RANGE OF WILDLIFE
IN ADDITION TO DOWNSIDE THERE
ARE PHEASANTS, QUAILS, WOODCOCKS,
PIGEONS, DUCKS, HERONS, & EGRETS.
SMALL MAMMALS ARE RATS,
FIELD MICE, RABBITS, RACCOONS,
& MUSKRAATS.
ALL OTHER FACTORS ARE INDICATED
ON THE DRAWING.

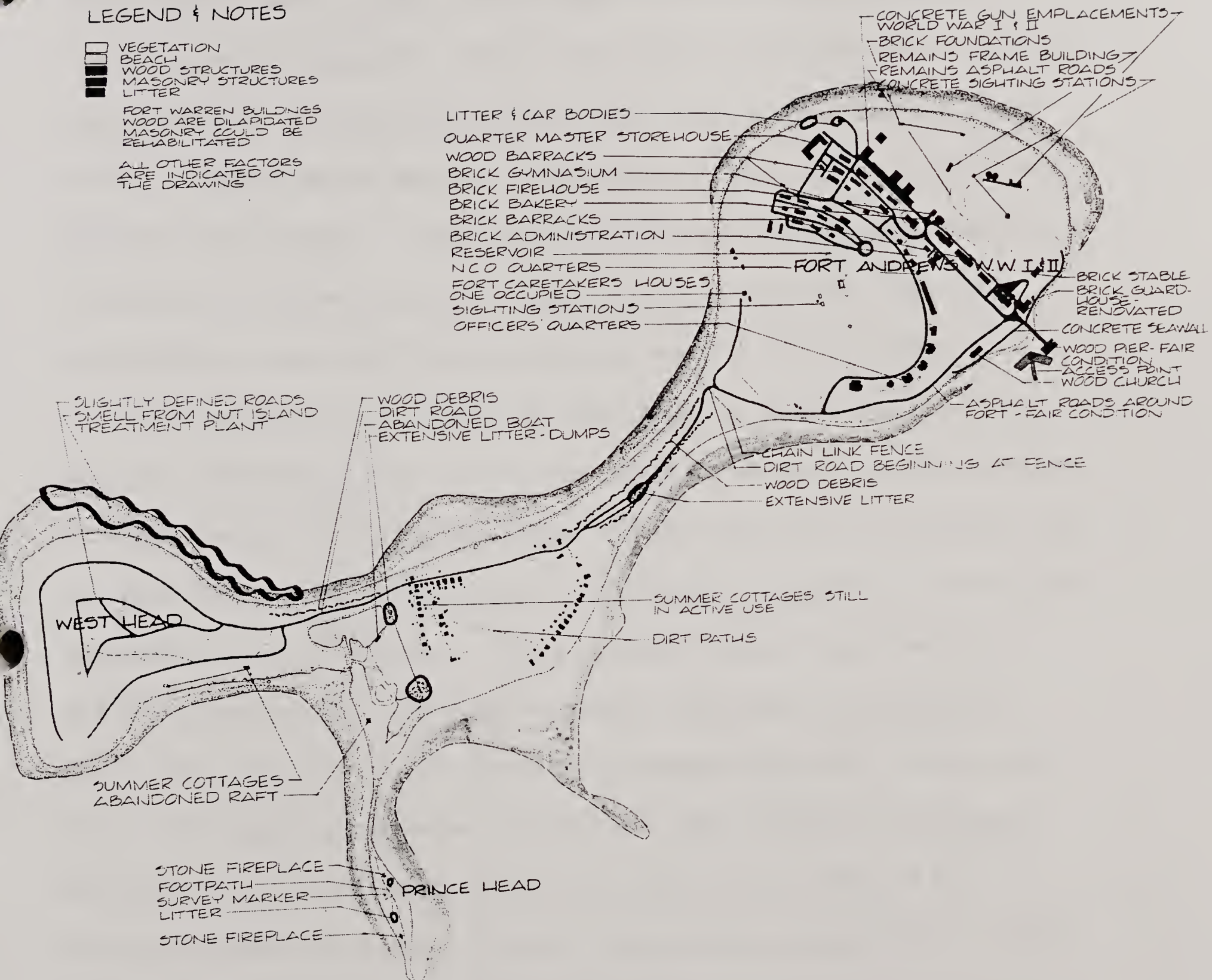


LEGEND & NOTES

- VEGETATION
- BEACH
- WOOD STRUCTURES
- MASONRY STRUCTURES
- LITTER

FORT WARREN BUILDINGS
WOOD ARE DILAPIDATED
MASONRY COULD BE
REHABILITATED

ALL OTHER FACTORS
ARE INDICATED ON
THE DRAWING



MAN MADE FACTORS






mortar batteries, each composed of eight 12 inch guns, were completed in 1904. Half of the guns were removed in World War I and were never replaced. During the First World War the Fort was garrisoned by the Coast Artillery and 3 and 6 inch rifles were added. During World War II, anti-aircraft guns and observation stations were added. The regimental headquarters and a hospital training unit were located on the Island. Over 1000 Italian prisoners of war were held at Fort Andrews during the War.

The permanent buildings of Fort Andrews are a considerable man-made resource. The 6 and 8 coursed brick structures, consist of 6 duplexes, 2 single dwellings and one apartment building, all of which were used for officer's quarters; a hospital; three large barracks; a guard house; a large quarter master storehouse; a stable; a gymnasium; an administration building; a firehouse and a post exchange. In addition to these buildings, there were dozens of temporary wooden structures. The officer's quarters and most of the temporary structures were badly damaged by Hurricane Diane in 1954. The Fort was placed on caretaker status in 1947 and sold as surplus property in 1958. It was acquired by the MDC in 1968.






The sand spit connecting the east drumlin and the middle drumlin has good beaches on both sides. The middle drumlin has about 40 old summer cottages and several year round residences dot this hill. The residents have a 10 year renewable lease with the MDC.

PEDDOCK'S ISLAND








SLOPE

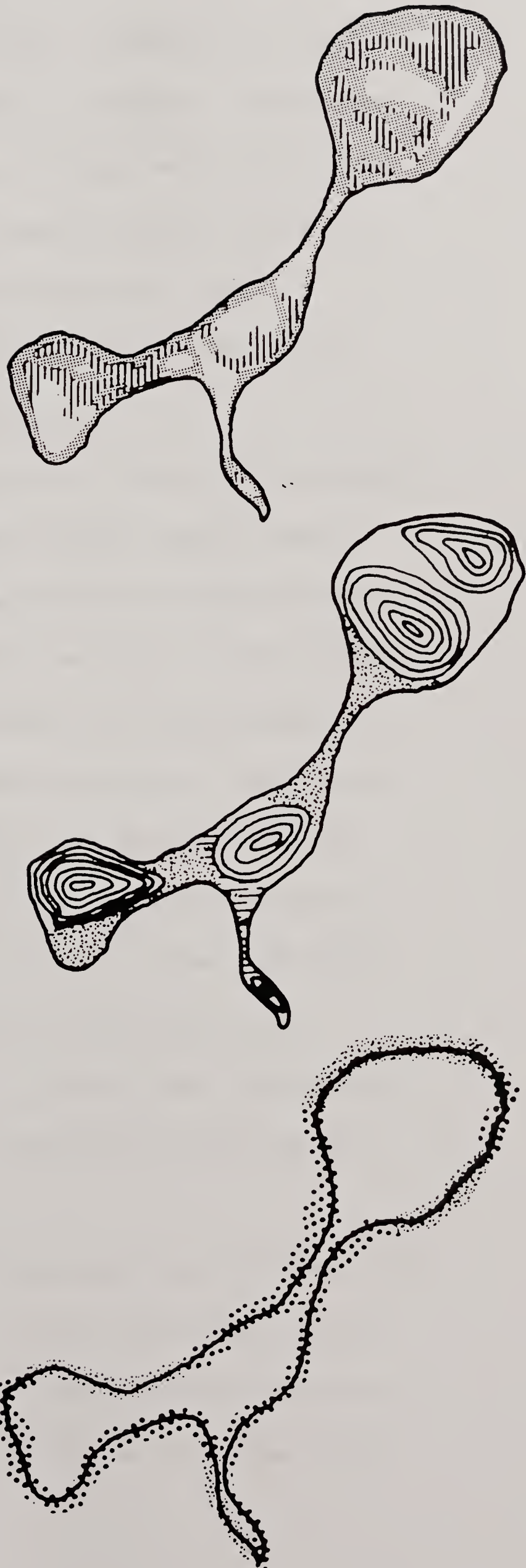
-  0 - 5%
-  5 - 12%
-  12% and above

GEOLOGY

-  Beach, Sand, Gravel
-  Silt, Muck, Peat
-  Man-made
-  Drumlin
-  Bedrock

BEACH AREAS

-  Mostly Sand (fine sand)
-  Coarse Sand (coarse grade sand, pebbles, shells)
-  Mixed (coarse sand, pebbles, shells, small rocks)
-  Rocky (small rocks to 8 inches in diameter)
-  Seawall/Rip-rap (broken/intact seawall/rip-rap)
-  Steep-eroded Banks (areas of major erosion)
-  Bedrock (outcropping)



The West Head of Peddock's Island, also a drumlin, is undeveloped with the exception of a few small cottages. There are paths leading through the dense covering of brush and young trees. A Black-Crowned Night Heron rookery was found in apple trees on West Head. While this is not an endangered species, the Massachusetts Audubon Society reports that only two other such rookeries are known to exist in Massachusetts.

The East Head of Peddock's Island supports some of the densest wooded areas in Boston Harbor, mature and sapling maple, pine, apple, birch, and cottonwood trees and beautiful viburnum shrubs. Fort Andrews is situated in a narrow valley between the two wooded drumlins. Mature maple trees line the roads with young saplings growing on previous grass areas. The other drumlin on East Head is predominantly thick impenetrable brush, with scattered pine, apple and birch trees. The middle drumlin is covered with young cottonwood, apple and pine trees and thick brush. The sand spits support large clumps of wild roses. A small salt-marsh lies between West Head and the middle drumlin. Prince Head, the fourth drumlin, is a very small peninsula and is severely eroded on all sides.

The western end of West Head and the northern end of East Head are severely eroded. Good beaches exist on the sand spit between East Head and the middle drumlin, while the remainder of the shoreline is mostly rocky. Good clam digging exists on the tide flats.

The Island is a short distance from Pemberton Point in Hull.

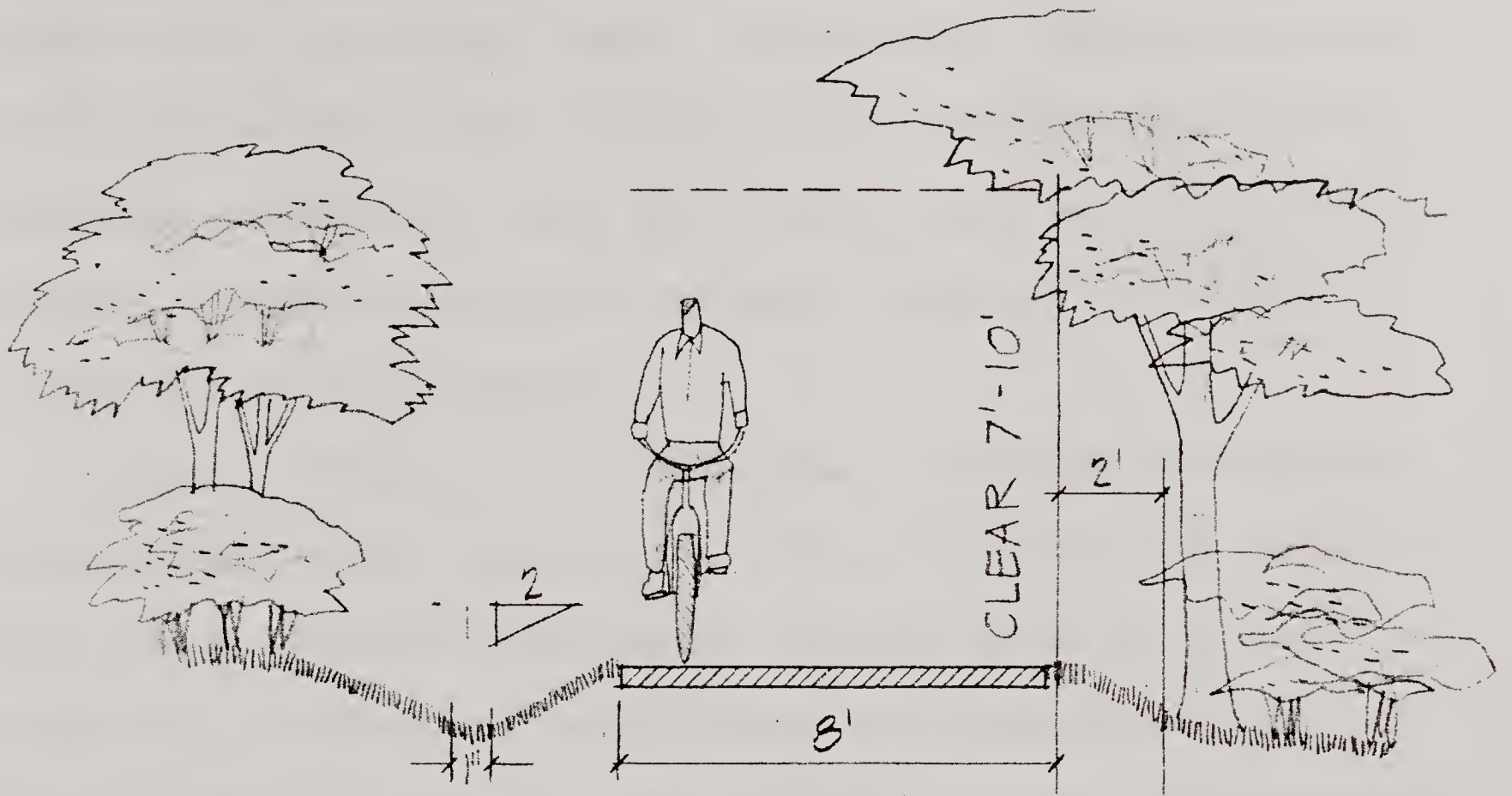
Hull Gut, an important shipping channel, with a rapid current, runs between the Island and Hull.

PEDDOCK'S ISLAND

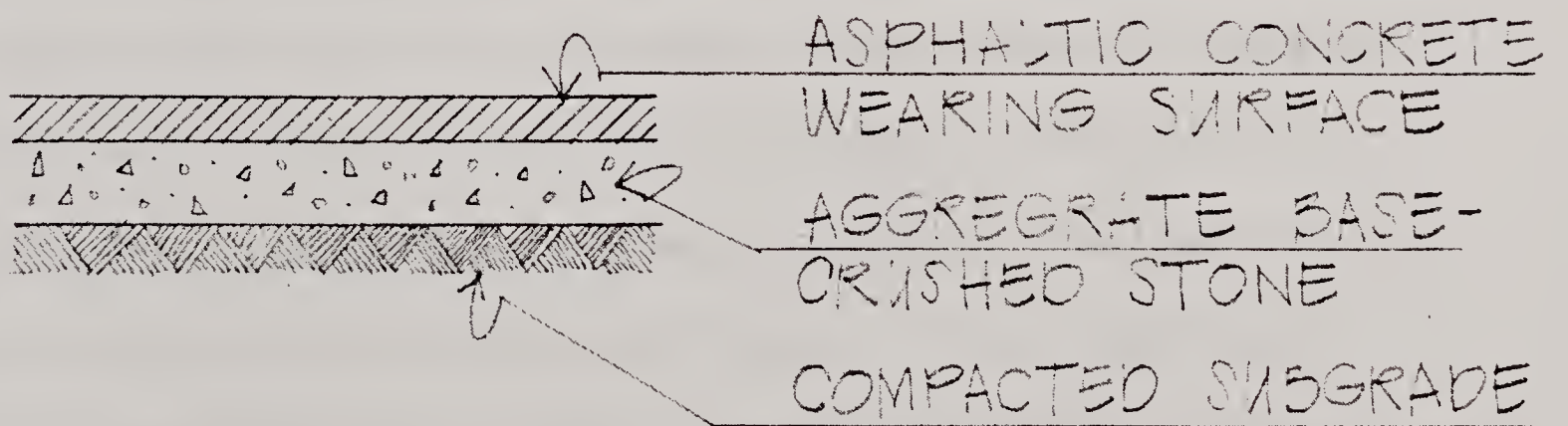
Plan. The plan for Peddock's Island emphasizes the important man-made resource represented by the abandoned buildings of Fort Andrews, and the varied natural resources of the Island, including the beach area for swimming, the wooded area for quiet walks and contemplation of nature, and the natural habitat areas. Other important features include a 3 mile bicycle loop, group camping facilities, playfields, and a small salt-marsh interpretive center.

A major program to rehabilitate the brick structures of Fort Andrews will provide a large, multipurpose conference and recreation center.* This facility has the potential of being one of the most complete and attractive centers in New England. The buildings provide spaces that are ideally suited to the requirements of such a center. The three barracks provide excellent dormitory space on the upper two floors and meeting, living, and dining spaces on the first floor. From 350 to 500 persons could be accommodated in these dormitories. The old administration building is ideally suited as an administration center for the entire Island, with offices, small conference rooms, display space and an ecology and general reading library for the complex.

*NOTE: An extensive survey was conducted of regional social service agencies, educational organizations, and universities to determine the local interest in such a facility. The results of this survey are reflected in the proposals and are described in a limited distribution report of support documentation for the Peddock's Island Plan.



TYPICAL BIKE PATH W/
CLEARING AND DRAINAGE
 SCALE 1/4" = 1'-0"



TYPICAL SECTION - BASE DESIGN
 SCALE 1" = 1'-0"

TYPICAL BICYCLE PATH DETAILS
 BOSTON HARBOR ISLANDS

The former hospital provides large meeting spaces for the Island's major convention center. A variety of room sizes can be created by temporary space dividers, to accommodate varied group activities. Sufficient space for a craft center and studios for painting, sculpture, ceramics, and metal working is available in the basement of this structure.

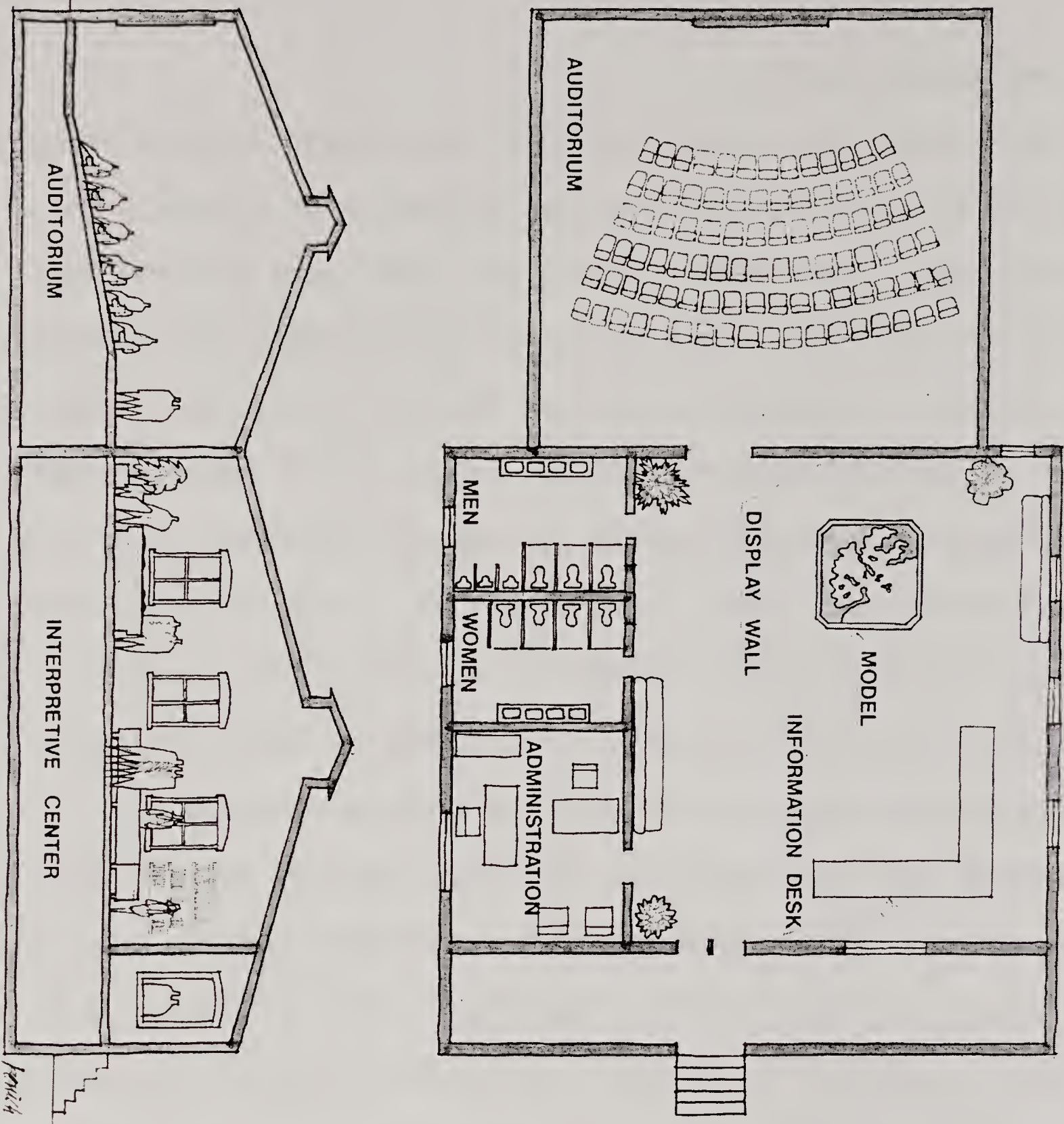
A Harbor Island Inn is an additional feature of the visitor accommodations of the complex. This Inn, located in the large, 2½ story, former officer's apartments, provides space for a fine dining room, a lounge, 32 double rooms, plus additional attic dormitory space for 40 beds. This facility provides accommodations on the Island that would follow the tradition of popular inns in the Harbor during the 1800's.

Eight units of rental housing for families or special groups are provided by the plan in the commissioned officer's quarters. These units vary in size from 2 to 3 bedrooms, with utilities, and would be for week-long or weekend use during the peak season or longer rental periods in the off-season. Five additional units of non-commissioned officer's quarters provide accommodations for the year-round Island personnel and for extra summer employees.

A store for the purchase of Harbor Island literature, craft materials, groceries, and other supplies is provided in the old post exchange building. The gymnasium is used as an indoor physical recreation center for the Island. It can also be used for minor theater presentations, dances, and concerts. The stable building is re-used as a bicycle rental and repair center.

A fire truck is maintained in the old fire station. The largest building on the Island is the Quarter-Master Storehouse. This building can provide space for a number of functions including storage for maintenance equipment, artists' studios, offices, and a possible island research field station to be operated by area universities.

The major Island Visitor Center for the Hingham Bay Sub-System is located next to the ferry dock, in the recently renovated, former guardhouse. The building has been logically divided into two parts - a display space - waiting room and an auditorium for audio-visual presentations. The waiting room will also serve as a recreation and information center for the Island providing maps and descriptive pamphlets on Peddock's Island and the other Islands in Hingham Bay. Static displays and mural sized photos will add visual interest and help illustrate the Island's natural environment. Rest rooms are provided off this space. The auditorium space is located in the area once occupied by the jail cells. It is used to present a general orientation to the Harbor Islands Park System and more specific information on Peddock's Grape, Slate, Bumpkin, Raccoon, Sarah, Langlee, Ragged, and Button Islands. The audio-visual presentation will include histories of the Islands and surrounding shoreline, important natural features, and the conservation and recreation programs that exist on each of the Islands in the Sub-System. The office space and small conference rooms included with other Visitor Centers are located in the Island Administration Building.

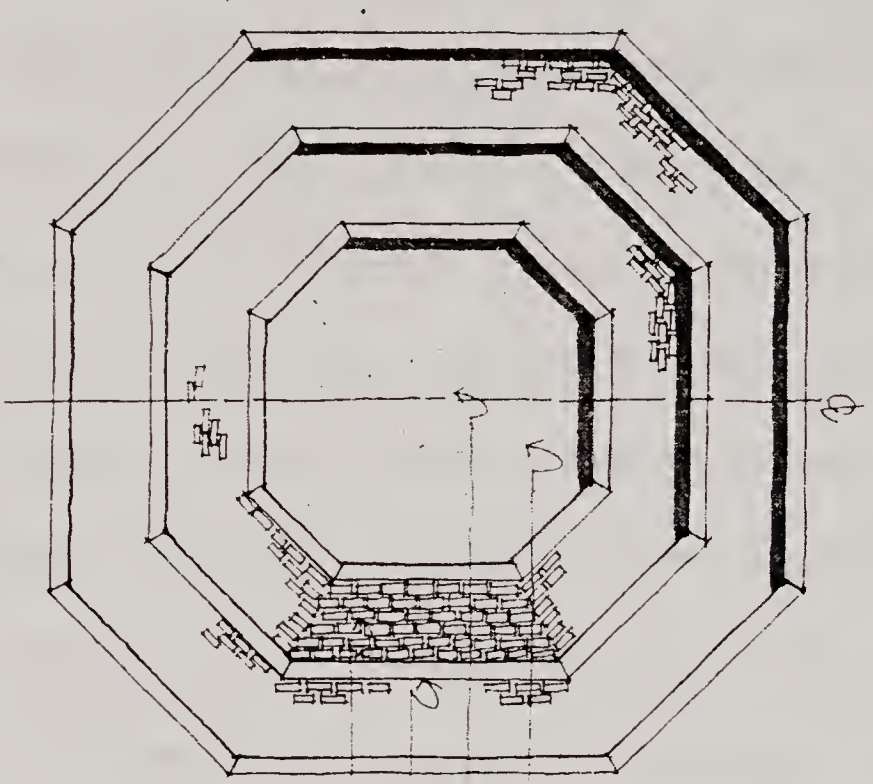
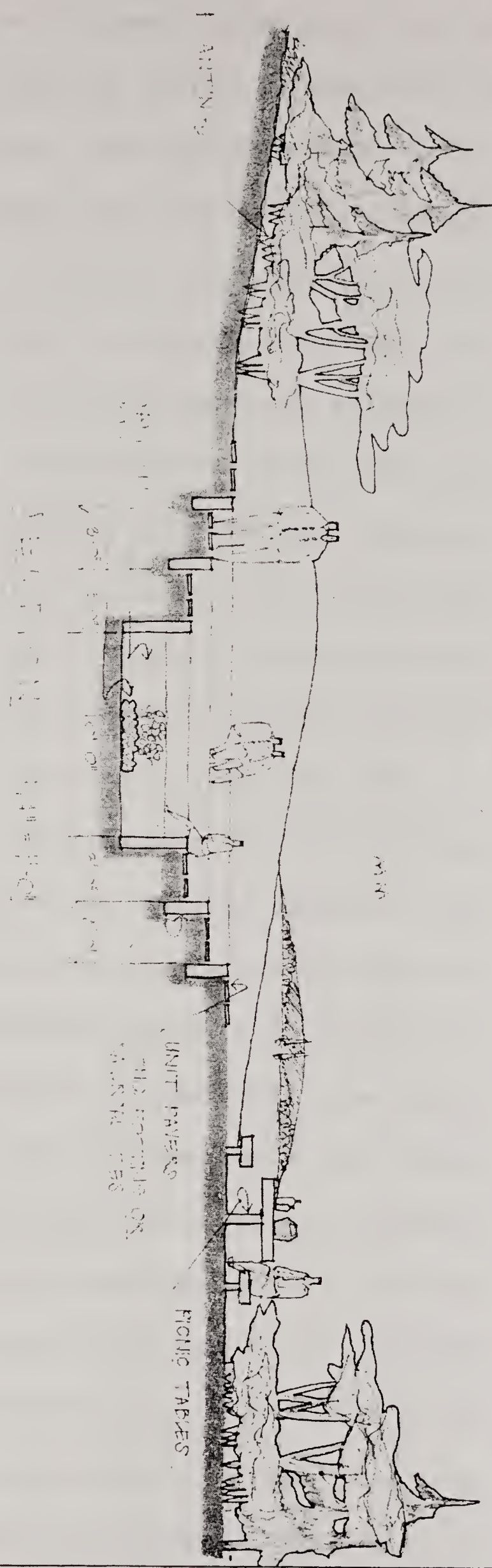


VISITOR CENTER

Programs for this island facility may include a full spectrum of educational and recreational activities for all ages. Instruction in arts and crafts, environmental workshops, an annual arts festival, and a variety of cultural enrichment programs would provide a variety of summertime island experiences for groups of children, families, the elderly, and other groups or individuals.

During the fall, winter, and spring the Fort Andrews complex offers an exciting, unique location for conferences and conventions. The center would be located in an idyllic natural setting only an hour ferry ride from Long Wharf in downtown Boston.

Other areas on the Island are designed to emphasize their natural factors and will complement the multi-purpose center. The thickly wooded East Head is maintained as a high quality natural environment with walking trails for passive enjoyment of the outdoors. A rip-rap retaining wall is proposed to protect the Head from erosion. A swimming beach and picnic area for 300 people is located on the narrow sandy area between East Head and the middle drumlin. The picnic areas, with fifty tables and charcoal fireplaces is in the wooded area at the western foot of East Head. The area is serviced with a bathhouse and comfort station as well as a refreshment stand.



PLAN 1/4" = 1'-0"

SAND AREA
CLAM BAKE PIT
CONC. EDGE OR R.R. TIES
PAVERS w/ GRASS JOINTS

UNIT PAVERS
THIS SIDE OF
PAVERS
FACING TABLES

CLAM BAKES

The middle portion of Peddock's Island is now occupied by 41 summer cottages which have a 10 year lease from the MDC. Since the plan for East Head includes a number of renovated officer's quarters which would be available for family rentals throughout the year, these cottages should be acquired by the MDC as soon as feasible and the area developed as a small group campground.

Three camp sites are provided surrounding a large central play-field and following the natural topography. Each of these sites is capable of holding approximately 50 campers. The three sites are each provided with a central shelter for cooking and eating and a comfort station and bathhouse. Each of these sites is subdivided into small areas that can be used by groups of 10-20 campers.

The West Head is the most isolated end of the Island and was found to provide excellent habitat for wildlife. The dense underbrush and several small trees, including fruit trees, provide fine protection and food for a variety of birds. One of the few rookeries of Black-Crowned Night Herons in Massachusetts is located on West Head and should be protected. The plan for West Head recommends a wildlife management area to maintain and attract wildlife. Very few trails are provided in this area as a means of protecting the wildlife and natural habitat. The few trails are designed as self-guided nature trails with interpretive signs to explain the life cycles of the species and the importance of the habitat. Prohibiting the entrance of people to this area may be necessary during the critical mating and nesting periods in March, April and May.



WILDLIFE SANCTUARY

The salt-marsh, located between West Head and the middle of Peacock's Island, is also maintained as a neutral habitat. It has a small interpretive center with descriptive information on the ecology of the tidal salt-marsh and a system of trails and floating boardwalks for a self-guided walk to explore the unique environment.

LANDSCAPING

The plans for the Harbor Islands have identified several types of landscape treatment, including selective clearing of underbrush, planting for erosion control, shade tree planting, screen and windbreak planting, and planting for wildlife habitat improvement.

It is important to recognize the unique qualities of the seashore environment offered by the Harbor Islands. The preservation and enhancement of these special qualities require a sensitivity to this natural resource. It affords the people of the Commonwealth rare opportunities for aesthetic, recreational and educational experiences. For this reason recreational development should be accompanied by an active conservation management program, emphasizing a cautious understanding of the possible effects on the various interdependent habitats.

SELECTIVE CLEARING

A program of selective clearing of underbrush and thinning of young saplings is recommended on several islands. Dense sumac, poison ivy, and young saplings have overgrown many islands as part of a natural process of plant succession from open fields to young and finally mature forests. Some recreational uses, views, walking trails, and conservation management programs justify clearing of carefully selected areas of brush and trees. Where possible, established trails should be improved before disturbing brush areas to build new trails. In all cases the possible effects of clearing should be considered before such changes are made.

PLANTING FOR EROSION CONTROL

Erosion of the banks on the drumlins of the Harbor Islands is very common. Planting of these banks with certain ground covers, grasses or easily rooting vines and creeping shrubs, is an important means of helping to prevent this erosion. The plants should be vigorous growing species, which root along procumbent (trailing on the ground) stems on the surface or with underground stolons or runners. Both types of growth tend to hold the soil and keep it from eroding in storms. Soil type, soil moisture, steepness of the bank, and the urgency of stopping erosion all govern the type of plant selected and the planting distances to be used.

SHADE, WINDBREAK AND SCREEN TREE PLANTING

The plans indicate shade trees in a variety of areas which would be used for the passive enjoyment of nature, for picnicking sites, for camping sites, and around buildings and other intensively used facilities. Deciduous trees offer the advantage of providing shade during the summer months and allowing maximum sun penetration in the winter after the leaves have fallen.

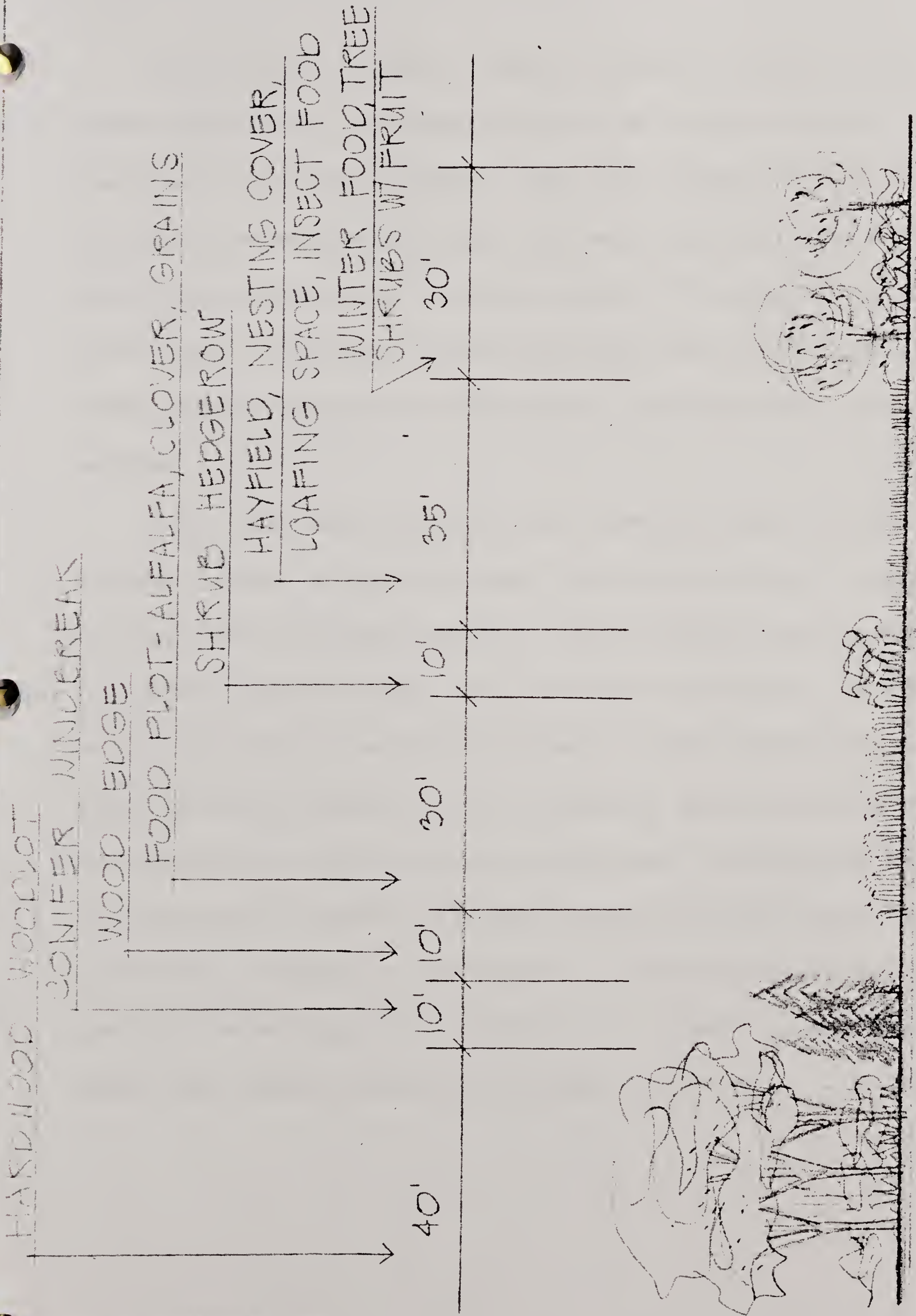
Trees are also recommended for windbreaks, especially around open exposed areas such as playfields, and on the north and northeast sides of various facilities. Evergreen trees, with their relatively dense year-round foliage, provide good windbreaks. A combination of a majority of deciduous trees planted on the

south side of trails and other facilities and a majority of evergreen trees on the northern side can provide the advantages of shade in summer, sun in winter and wind protection from the harsh northerly winds of the winter.

Screen trees, mostly evergreens, and other screen plants such as bush shrubs are indicated on the plans for a variety of purposes, including the assurance of privacy, screening unattractive facilities, and isolating one use from an adjacent, incompatible use. One picnic table or campsite can seem relatively private and isolated from adjacent facilities by the careful provision of screen planting. A variety of shrubs are also especially attractive as a means of softening the lines of buildings and helping them appear more as a part of the Islands' natural environment. Several varieties of shrubs are also desirable for their contribution to the visual quality of the Harbor. These include flowering shrubs and varieties selected for their fall foliage.

PLANTING FOR WILDLIFE HABITAT IMPROVEMENT

All wildlife need food and cover. To adequately support wildlife, there should be a plentiful year-round supply of food close to cover which furnishes protection from predators and weather.



WILDLIFE MANAGEMENT AREA BOSTON HARBOR ISLANDS

MANAGEMENT SECTION
SCALE 1" = 20'-0"

* WILDLIFE HABITAT IMPROVEMENT, DIVISION OF FISHERIES AND GAME, MATTHEW B. CONNOLLY, ET AL.

Wild fruits, insects, aquatic animals, grains, nuts, and green plants will generally provide an ample supply of food for some birds and small mammals from late spring to late fall. Food becomes scarce in winter and early spring. Shrubs that keep nuts and berries into the winter and remain above the snow cover, and other cover plantings that protect such natural food sources as grasses and grains, are important winter food sources.

Birds and small mammals need several kinds of cover to conceal nests, to provide shade from the hot sun, to provide shelter from chilling rains, to allow escape from enemies, and to protect against snow, cold and wind in winter. Grasses, weeds, and other low growing plants provide mating and roosting areas for some species; dense or thorny shrubs provide protection from predators and spots for nesting and loafing; and clumps of evergreen or other tall dense growth provide cover for winter protection. Selective cutting in a wooded area allows the penetration of sunlight, promoting the growth of succulent grasses, shoots and weeds attractive to some wildlife.

Open fields can be improved as a wildlife habitat by increased tree and shrub plantings to provide a variety of cover and food. Nesting cover and food for birds can be created by surrounding windbreaks and screen tree clumps with fruit producing shrubs, and loafing space and cover for ground nesting birds can be provided by the planting of grasses and grains, which will attract insect populations creating an additional source of food for birds. The combination of grasses, shrubs, and screen trees in a confined area creates a hedgerow between woodland cover and field feeding areas.

In addition to plantings, access to small bodies of water, marshes, and mud flats is an important element for attracting wildlife. Waterfowl and wading birds are dependent upon shallow water areas to feed and loaf. Existing marshes may be improved by selective planting. The careful dredging of portions of some marshes may increase the productivity and variety of plants and animals. Wildlife areas should be separated by screen planting and distance from incompatible uses. Birds and other wildlife need privacy, especially during the nesting season. Paths and nature walks should be close enough to wildlife areas for vantage points but not so close that wildlife will be disturbed.*

*Additional information on landscape treatment, including plant materials for seashore conditions, erosion control, and wildlife habitat improvement is included in the Boston Harbor Islands Comprehensive Plan, Appendix, p. 148, Metropolitan Area Planning Council, Boston, Massachusetts, October, 1972.

COMFORT STATIONS

Three types of comfort stations have been identified by the Island plans -- large comfort station/bathhouse combinations; smaller comfort stations; and chemical toilets.

The larger comfort station/bathhouse combinations are generally located adjacent to the largest swimming beaches or group camping sites and consist of two sets of rest rooms, each provided with shower stalls. The size of each facility varies with the number of persons it is intended to serve. Each comfort station/bathhouse combination is provided with hot and cold running water and a septic system or is connected with a larger sewage treatment system.

Comfort stations without bathhouses are provided in several intensively used locations away from large beaches and camping complexes. These facilities consist of two sets of rest rooms and are also provided with running water and sewage disposal systems.

The location of the comfort stations has been based on tentative considerations of surficial drainage and topography. Final location will depend on further analysis and detailed engineering studies of subsurface soil drainage.

Chemical flush toilets, attractively housed in a specially designed comfort station, provide an excellent means of providing public sanitation facilities in less intensively used areas or in locations that are not suitable for septic tank construction. Public demand for good self-contained sanitation facilities, as a way of reducing pollution problems, has resulted in dramatic changes in the quality and efficiency of chemical toilets. New self-contained, recirculating, flushing toilets provide a 99% decrease in fresh water requirements because they filter, chemically treat and re-use the same water to flush the bowl. Such facilities are currently being used in many national parks and recreation areas. They are attractively designed for public use and easy service and maintenance. They also provide an excellent interim facility while more permanent comfort stations are being constructed.

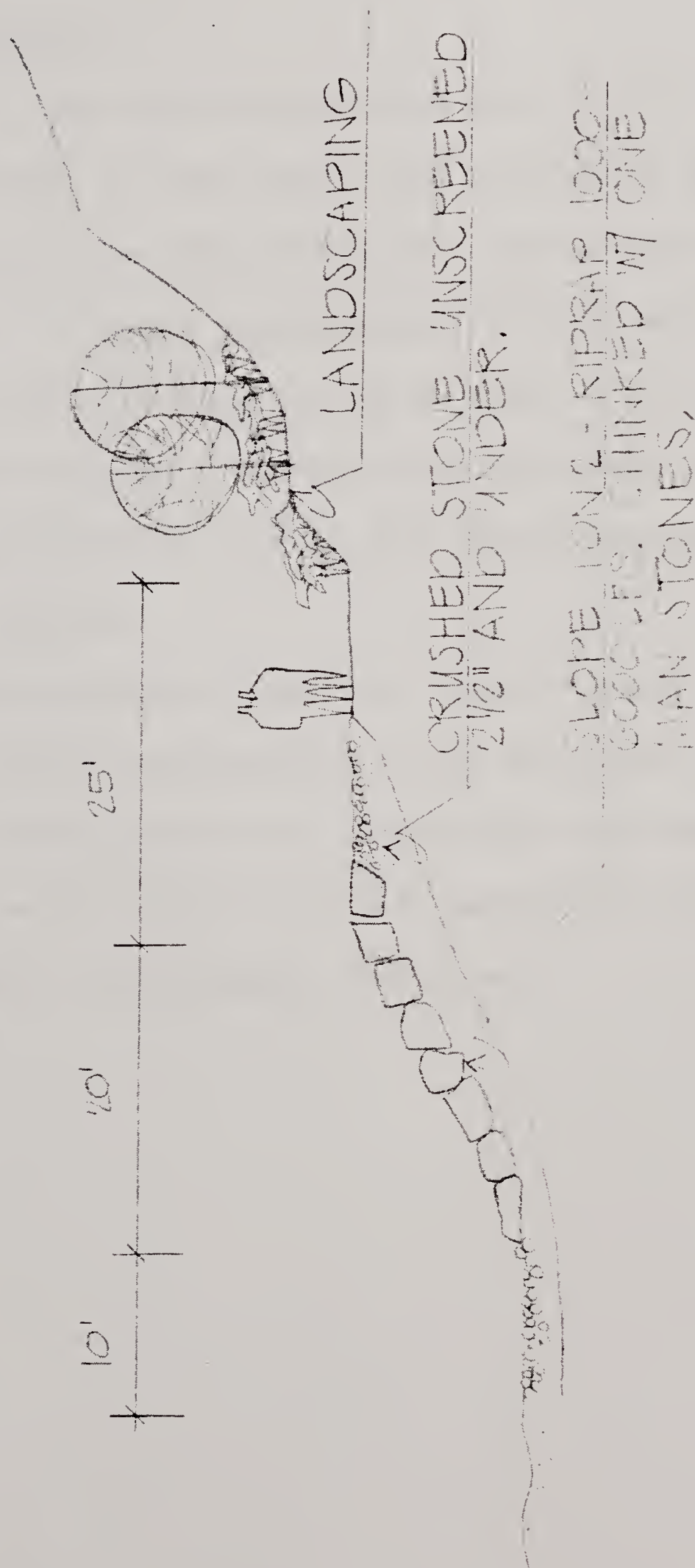
Other interim facility considerations may include the design and placement of special utility barges at the docks of some islands. Such a barge would have a water reservoir, chemical toilets, and a power generator, providing good flexibility, mobility, and security.

SEAWALLS AND REVETMENTS

The building of seawalls and revetments has received some attention in this report as a means of retarding the natural forces of erosion. Each case of erosion on the Harbor Islands is distinct and would require further, more detailed study than that within the scope of this Plan. In several cases the very excellent cut granite seawalls, constructed in the mid 1800's are in need of repair. These repairs should be done as soon as possible or extensive damage to the Islands may occur. The plans have indicated general areas on the major Islands where erosion is severe and protection appears necessary and desirable. The selection of these areas has included considerations of the size and use of the Island and its value for the total Park System. In all cases the benefits have surpassed the costs of providing the protection. This is, of course, subject to more rigorous analysis of both the costs and benefits.

The designs of the protective seawalls should be compatible with the natural character and use of the Islands. Access to the beach areas below the seawalls should be provided and the top of the wall or rip-rap berm should accommodate walking trails and not block views.

RETAINING STRUCTURE - RIPRAP WALL BOSTON HARBOR ISLANDS



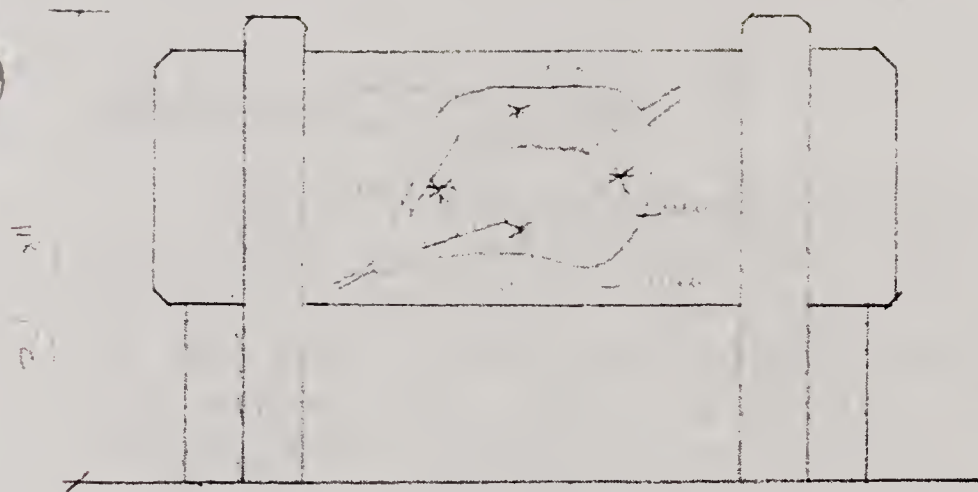
RIPRAP SECTION

INTERPRETIVE MARKERS

Markers or signs are indicated on many of the Island plans to give information on the history and ecology of the Islands. Such markers should be compatible with their surroundings. On nature trails or in other predominately natural areas markers should have a rustic appearance and be made of natural materials, including stone and wood. Markers on buildings or in some historic areas might appropriately utilize more durable man-made materials, such as metal plaques.

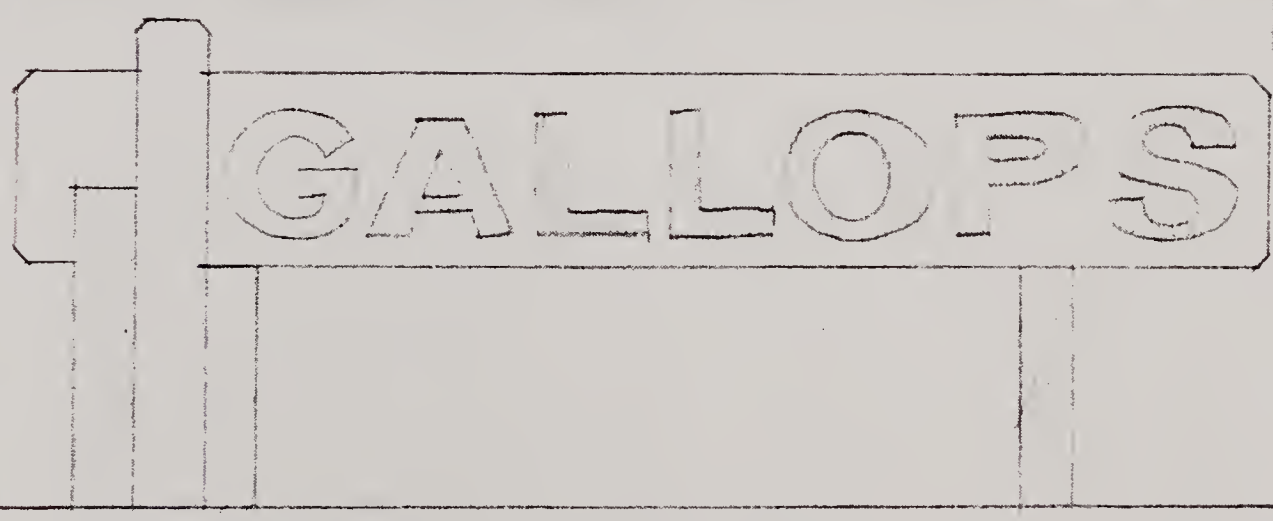
Interpretive centers in natural areas on some islands incorporate a shelter with markers, maps and other descriptive information. These shelters are located at the beginning of several nature walks through wildlife sanctuaries and in other areas with special environmental features.

2-0



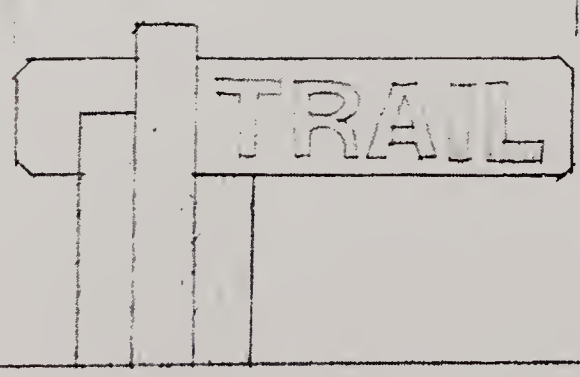
MAP SIGN 11'-0" x 2'-0"

10'-0"

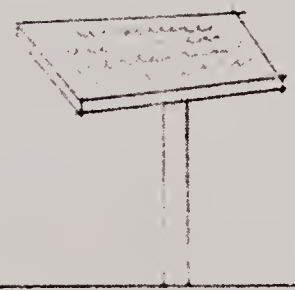


GALLOPS SIGN 10'-0" x 4'-0"

4'-0"



1'-0"

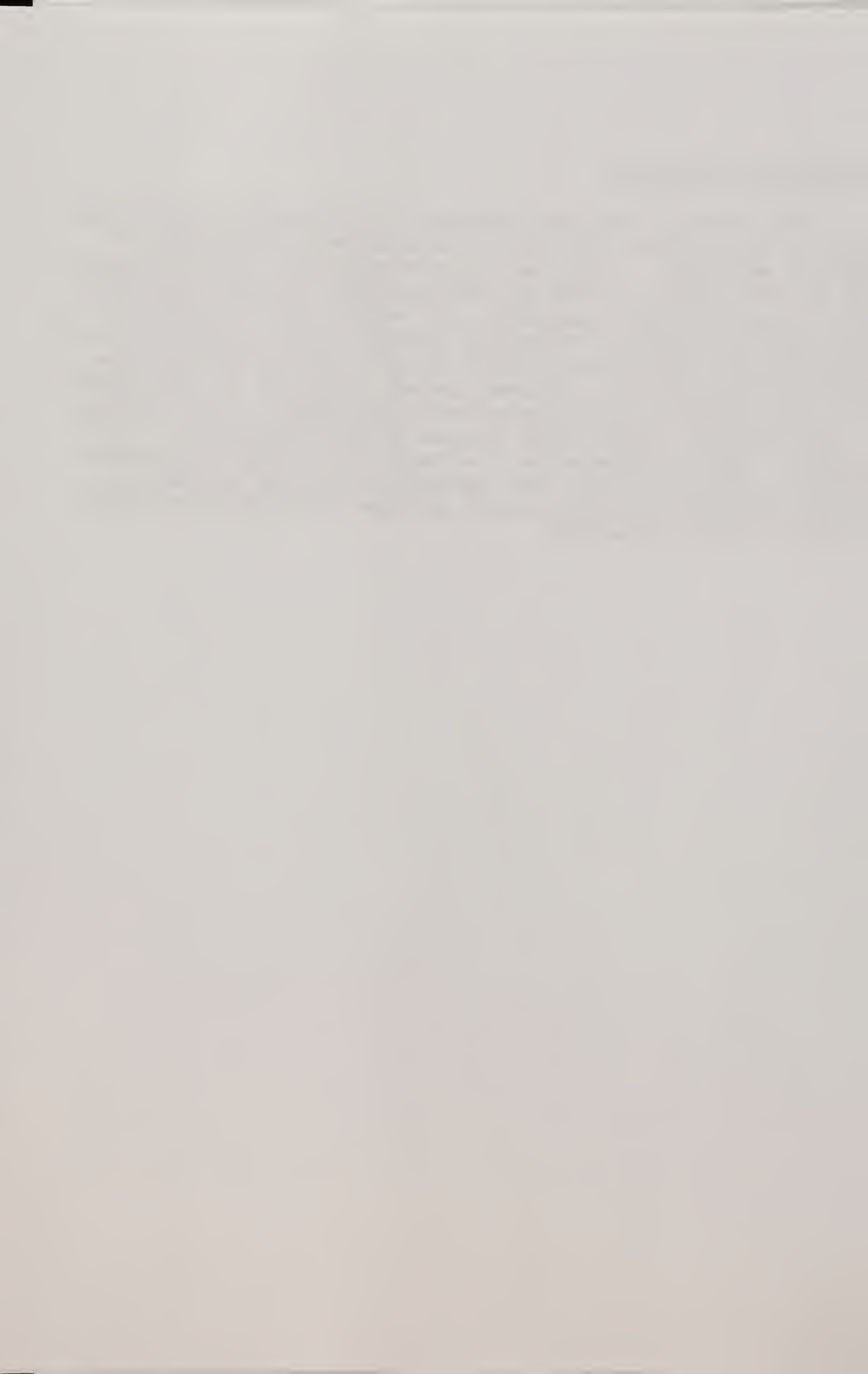


MARKERS AND POINTS OF INTEREST

ISLAND SIGN DETAILS
BOSTON HARBOR ISLANDS

ISLAND ADMINISTRATION

The administration and operation of the Harbor Islands Park System is clearly placed with the Massachusetts Department of Natural Resources. Other important participants in the operation of the Park System include the Metropolitan District Commission, the cities and towns surrounding the Harbor, and a variety of other public agencies and private groups. Many of the details of operation and administration will have to be determined by the Department of Natural Resources through a process of cooperation with the various responsible agencies and groups. The following description will tentatively discuss the administration of each Island. These considerations are based on numerous conferences with the parties involved and represent a general consensus of island administration that may be further detailed and modified by inter-agency agreements.



PEDDOCK'S ISLAND

The Island is owned and operated by the Metropolitan District Commission. The plan for Peddock's Island proposes a major program of much needed conference, recreation, and conservation facilities. Overall administration and maintenance will be the responsibility of MDC. A variety of private and nonprofit organizations and private concessionaires may participate in the operation of the various facilities with limits and regulations established jointly by the MDC and DNR. The Department of Natural Resources will provide technical and management expertise for the wildlife sanctuary by joint agreement with the MDC, while financial support for facility development will be sought from the whole range of available sources. Initial financial support should be provided by the Department of Natural Resources by an appropriate inter-agency agreement.

PEDDOCK'S ISLAND
POTENTIAL USER'S SURVEY

In November of 1971 the Metropolitan Area Planning Council began to contact a variety of groups which were considered as potential users of the Fort Andrews structures on Peddocks Island. The groups contacted included social service agencies, educational organizations, local universities, and outing clubs.

A list of potential users was developed. At the same time MAPC designed the attached questionnaire and a package of material to describe the Island and the above referenced structures and to obtain information on each organizations' current program and potential interest in Peddocks Island.

In addition to the questionnaire the MAPC and the Metropolitan District Commission arranged a visit to the Island for a group of interested agency and organization representatives.

The general reaction from those contacted was that the buildings should be used as a "multi-purpose center." Ideas and specific suggestions ranged from an area-wide educational center to a home for juvenile offenders to a program for problem drinking drivers to low-income retirement housing. All of the ideas offered were reviewed by the project staff and formed a partial basis for the final recommendations for use of the buildings. Most respondents stated that they believed the Island to have "fantastic potential for serving socially useful purposes," and that the structures in their setting were highly suited for the programs of the various groups. Many respondents noted with some surprise the remarkably good condition of the buildings. All indicated that they would be interested in the restored buildings, as a "multi-purpose center" on a year round basis. The current number of persons who could be identified as potential users of the facility was determined to be in excess 50,000 annually and perhaps as high as 150,000.

Formal Responses Received From:

United Community Services (U.C.S.)

Representing 200 community service agencies receiving
United Fund support.

Action for Boston Community Development (A.B.C.D.)

The official community action agency for the City of
Boston.

Boston Council, Boy Scouts of America

Museum of Science

The Public Schools of Newton, Massachusetts

Other Agencies, Organizations, and Universities Consulted:

Boston University

Appalachian Mountain Club

Boston Children's Service

Department of Youth Services

American Youth Hostels

Boston Public Schools

Education Collaborative

Oceanographic Institute

Y.M.C.A.

South Boston Neighborhood House

Camp Fire Girls

Jewish Community Council of Metropolitan Boston

Harvard University



Metropolitan Area Planning Council

44 School Street Boston, Massachusetts 02108

Richard M. Doherty
Executive Director

(617) 523-2454

January 21, 1972

The Metropolitan Area Planning Council is recognized as the official regional planning agency for 101 communities in the Boston metropolitan area. The Council is primarily responsible for the preparation of comprehensive plans to improve the area's physical, social and economic environment.

The Council, in conjunction with the Massachusetts Department of Natural Resources, presently is undertaking a design project for the development of recreation and conservation sites on the Boston Harbor Islands. The potential development of these islands represents a unique opportunity to serve the recreational needs of central city residents.

Peddock's Island, in particular, has tremendous possibilities as a recreational/educational area for the urban population. Located off Pemberton Point, Hull, the island has remained in a predominantly natural state, an ideal setting for vacation activities only eight miles from downtown Boston.

Fort Andrews, with its abandoned and overgrown brick and wooden structures, occupies the northernmost drumlin. The twenty-six brick buildings that remain could be restored to house special groups such as retarded or handicapped children, Scout groups on special projects, artist groups, adult education programs, overnight campers, school field trips, field biology courses or year-round classrooms. The Fort complex could also be used for a variety of conferences and small conventions in the off-peak seasons. There are also numerous concrete bunkers and observation posts scattered throughout the northern drumlin which should be preserved for both historic and scenic interest.

Attached is some general information on Peddock's Island: a brief description of the island, its history, three maps, and three pages of pictures. The pictures represent a fair sampling of the type of brick structures found on the island. Also enclosed is a brief questionnaire which may be returned to this office in the envelope provided.

The Council would like your evaluation of the brick buildings and your recommendations for potential programs. Renovations will be expensive and we need to justify the importance of rehabilitating these structures.

However, when making your program recommendations, we would like you to picture the island as it will be, not as it appears today. Erosion will be controlled; vegetation along the footpaths and the paved roads will be thinned; docking facilities will be improved and expanded; inexpensive transportation via ferry service will be provided; a wildlife sanctuary on the West Head will be preserved; and finally, the most important concern of ours, the Fort Andrews structures will be retained and restored. With proper programming and development of facilities, close to 2000 persons could be accommodated on a daily basis.

The Council appreciates your assistance in formulating recommendations.

Attachment

PEDDOCK'S ISLAND DESCRIPTION

Peddock's Island, 113 acres in size, is the fourth largest island in Boston Harbor. Four drumlins, which may once have been individual islands, are connected by long, low sand bars. This creates an unusual configuration, and the longest shoreline.

The largest drumlin, nearly 88 acres in size, forms the north-east end of the island, a short distance from Pemberton Point in Hull. Hull Gut, an important shipping channel, runs between the Island and the mainland. Fort Andrews is the dominant feature on the drumlin. Over a dozen brick buildings, constructed around 1900, and abandoned in 1946, are still here. The MDC is currently renovating one. The remains of two large mortar batteries are located in the middle of the fort.

The large dock that once served the Fort is being rebuilt. A good sand beach is located near the dock. Growth on this northern drumlin is thick with several varieties of mature and young trees and brush.

The middle drumlin with good beach areas is smaller in size and elevation than the Fort Andrews drumlin. About forty old summer cottages dot this middle hill. Growth consists of grass and brush with a few fruit, cottonwood and pine trees.

A third section of Peddock's Island is West Head, again a drumlin formation. There are a few paths leading through a dense covering of brush, weeds, and small trees. With the exception of a few small cottages, this area is undeveloped. The south

side has a good beach but the north shore is very rocky. The north and west sides of the drumlin show signs of erosion. West Head has been identified as the site of a night heron rookery.

The fourth drumlin formation constituting Peddock's Island is the forty foot Prince Head. It is a very small appendage extending southerly from the West Head area, by a saltmarsh. Prince Head, severely eroded on all sides, is crowned with a plateau of grass and weeds.

PEDDOCK'S ISLAND HISTORY

The Island's first English settler was Leondrd Peddock who arrived here about 1622 as part of the Weston Company. The Island evidently had excellent pasture land as it is noted during the Revolutionary War that American raiders carried off 30 cattle and 500 sheep. In 1776, after the British left the Harbor, about 600 militiamen encamped on Peddock's to guard against a return by the English soldiers.

Ownership of the Island has passed through several families but the Island was not divided into small parcels. There were several residences and a few farms here during the mid 1800's, and later a few inns were established.

Around 1880, Prince's Head was used as a target range for testing large guns fired from Nut Island. The Alger Foundry in South Boston produced hundreds of guns and many were fired from the test site at Nut Island to Peddock's Island. In 1897, the Government acquired the entire eastern end of the Island in order to build a mortar battery. In 1900, the 88 acre site was officially designated Fort Andrews and consisted of two mortar batteries. Each battery was composed of eight 12" guns.

About 1909, there is a record of alleged gambling at the inns on the Island. The summer colony that still exists in the middle of Peddock was established about this time. The land was leased rather than sold.

During the first World War, the Fort was garrisoned by the Coast Artillery and 3" and 6" rifles were added. In World War II

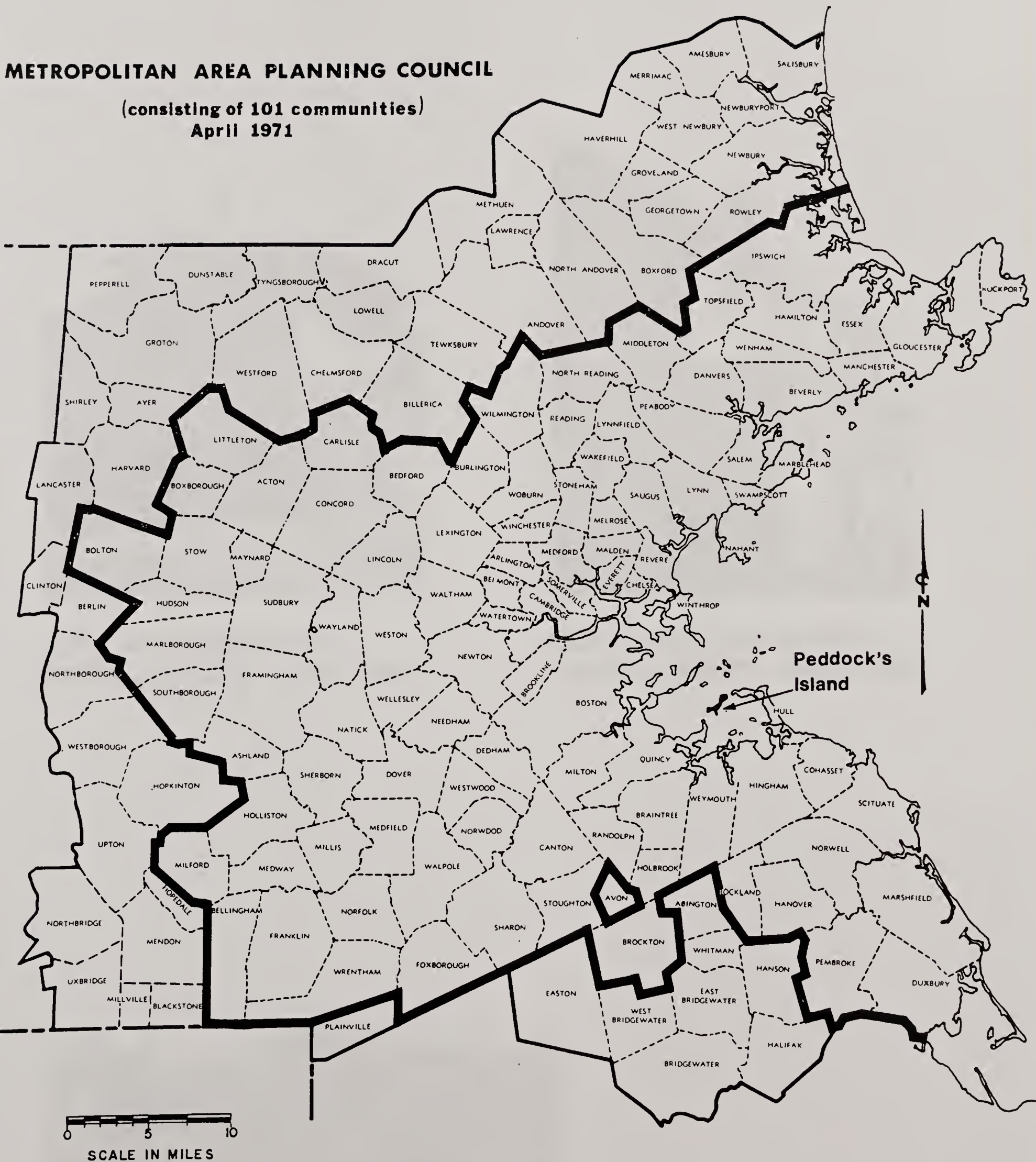
anti-aircraft guns were located here, but from a military standpoint, the Fort was obsolete. A regimental headquarters was located here, as well as a training area for a hospital unit. During the War, about 1,000 Italian prisoners of war were held at Fort Andrews.

The permanent building on Fort Andrews, exclusive of fortification structures, consist of 7 sets of officer's quarters, an officer's apartment building for 4 families, a hospital, 3 barracks with a capacity of 110 men each, a guardhouse, a large quarter master storehouse, a post exchange, a recreation and gymnasium building, and a stable. In addition to these structures, there were dozens of temporary wooden structures. The fort was placed on caretaker status in 1947 and sold as surplus property in 1958.

METROPOLITAN AREA PLANNING COUNCIL

(consisting of 101 communities)

April 1971



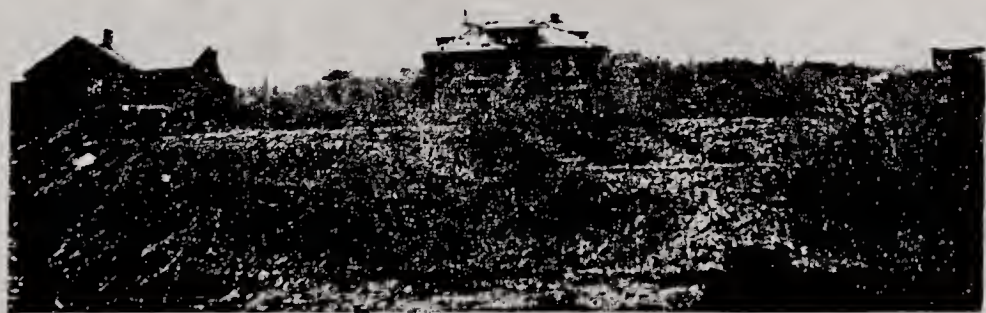
METROPOLITAN AREA PLANNING DISTRICT
ENLARGED TO PRESENT SIZE: CHAPTER 588, ACTS OF 1966
INITIAL LEGISLATION: CHAPTER 668, ACT OF 1963



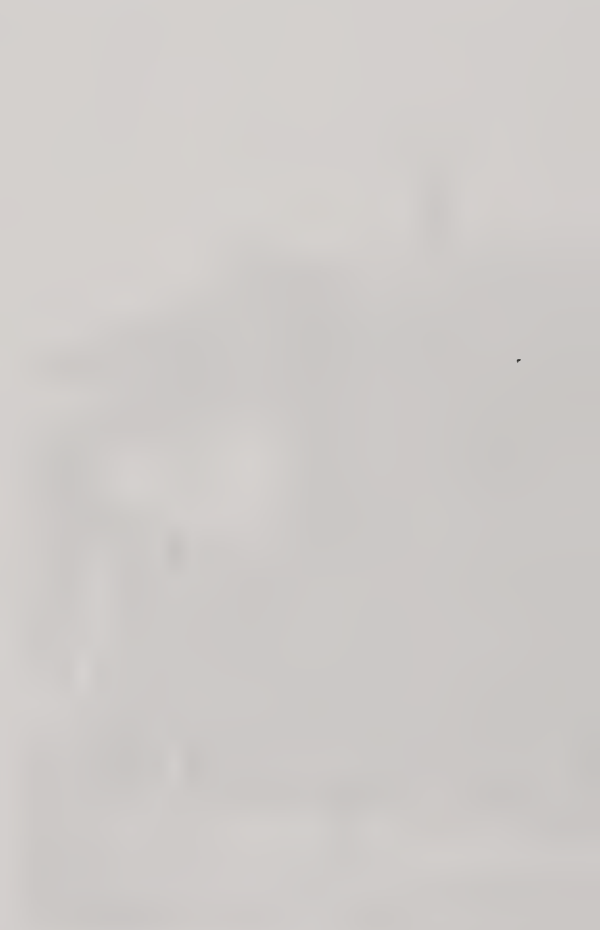
COMMISSIONED
OFFICER'S HOUSE



COMMISSIONED
OFFICER'S HOUSE



DISTANT VIEW OF ABOVE



THE UNIVERSITY OF CHICAGO
LIBRARY

THE UNIVERSITY OF CHICAGO
LIBRARY



THE UNIVERSITY OF CHICAGO
LIBRARY



TWO STORY BRICK
WAREHOUSE



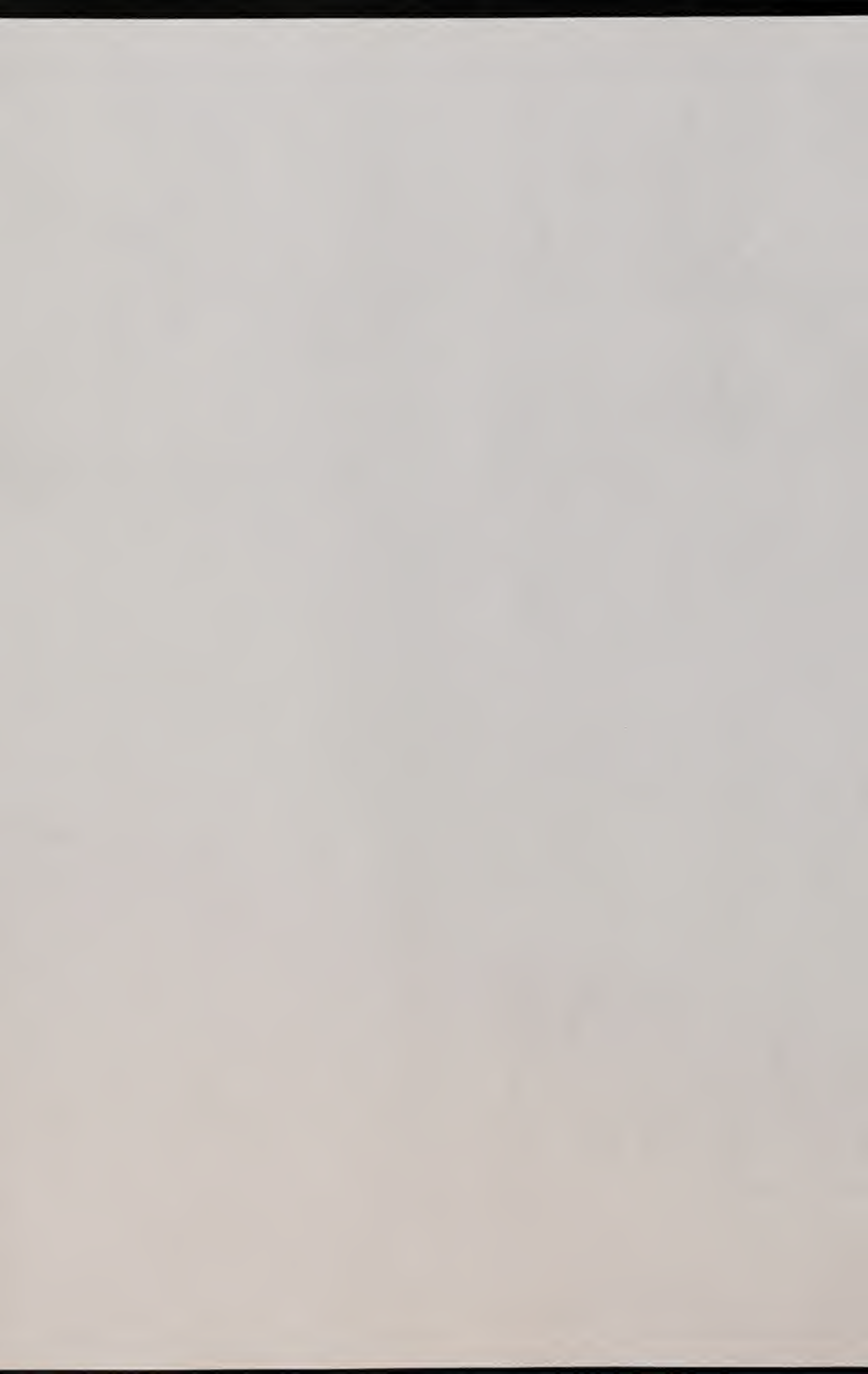
TWO STORY BRICK
WAREHOUSE



GYMNASIUM



HOSPITAL





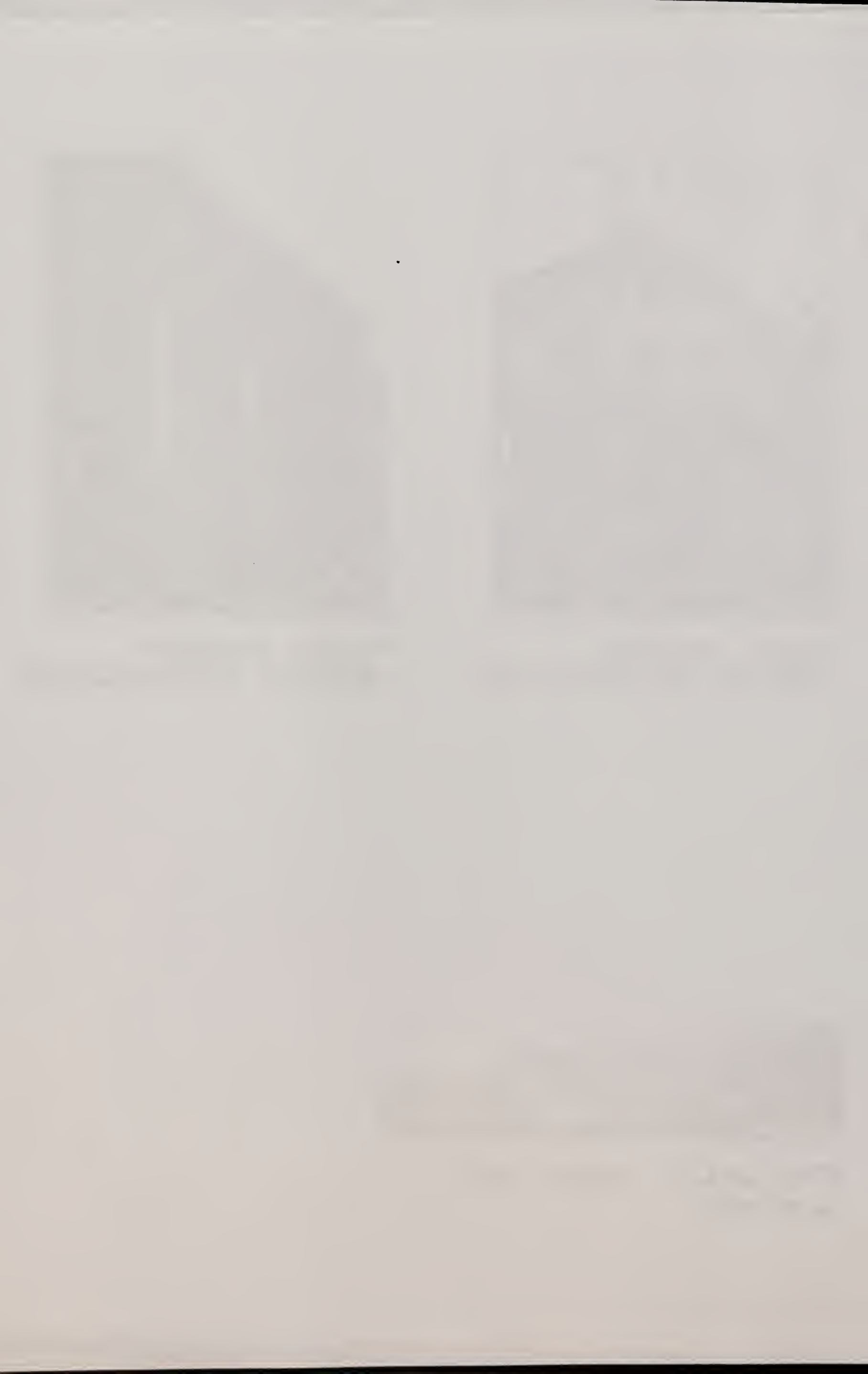
TWO STORY
BRICK BARRACKS



TWO STORY
BRICK BARRACKS



DISTANT VIEW OF
ABOVE



RETURN TO:

Lorraine S. Payne
Metropolitan Area Planning Council
44 School Street
Boston, Massachusetts 02108

1.) Name of Organization:

Address:

Your Name:

Title:

2.) Describe your organization's present program:

a) Type of activities:

b) Clientele served:

c) Number enrolled in present program

3.) Future plans:

a) New facilities:

b) New programs:

4.) Assuming that frequent transportation to Peddocks Island will be inexpensive and that the Fort Andrews structures will be rehabilitated, how would your organization make use of the existing buildings? Discuss the structures you would be most interested in, i.e. describe possible programs for these buildings and the number of people involved in the programs.

Large three-story barracks

Duplex houses

Hospital

Large dorm houses

Administration building

Gym

Storehouse

- 5.) Would your organization find use for Peddock's Island on a year-round basis or seasonal only?

SUMMARY OF COSTS AND PRIORITIES

Introduction

The costs and priorities for achieving the recreation and conservation purposes of the Harbor Islands Legislation have been developed in conjunction with the plans for each Island. Direct capital costs for the construction of piers, trails, picnic areas, small boat docks, landscaping, buildings, and other facilities for the enjoyment and construction of the Islands' man-made and natural resources total approximately 27 million dollars. This figure is derived from a detailed analysis of each Island's plan. However, any cost estimates, which are based on large scale designs, are necessarily tentative. They are subject to the more rigorous studies of costs to be conducted during the implementation of the general plans.

Priorities and Phasing

The expenditure of limited funds for any project can best be made according to a fairly detailed time schedule of development that is based on a system of priorities. While a detailed time schedule aids in ordering the implementation of a project, flexibility in many of the work elements will permit changes when special, unforeseen opportunities or difficulties are discovered.

Three time periods or phases have been used to schedule costs for the Harbor Islands Comprehensive Plan. Each of these three phases has recommended projects to be started within certain specific time periods. However, the schedule is not intended to be a strict year-by-year listing of work to be completed. Instead the three phases indicate levels of priority. Phase I, 1972-1975, corresponds to projects of the first priority, Phases II, 1976-1980, and III, 1981-1990, equal second and third priorities, respectively. In several obvious cases, work begun in Phase I must be completed before Phase II projects are begun, in other cases Phase II projects may be started during Phase I or before certain Phase I projects are completed; thus, the dates and divisions between phases are relatively flexible.

Costs.

Development costs for the individual Island plans have been prepared by the MAPC from a variety of sources, including published unit cost data, current cost information from local contractors, equipment catalogues and the costs of MDC and DNR projects that are applicable to the Island plans. Actual bid prices received by the Massachusetts Department of Public Works and information from marine contractors were used to develop costs for seawall and pier construction. Costs for barge removal were obtained from the draft of the U.S. Army Corps of Engineers "Debris Removal Study" and from information provided by marine contractors. Costs for transportation of material and workmen were obtained from various marine transport companies working in the Harbor.

Fortification Renovation.

The renovation and restoration of the various historic forts in Boston Harbor presented a special cost estimation problem. While these structures represent a major man-made resource, they show the damage of years of neglect. Costs for their renovation were based on several assumptions. It was assumed that full restoration or renovation would be reserved for the most significant of the forts while limited steps would be taken at the majority of the sites. Limited renovation would include only such measures as would be necessary to render the forts safe and arrest the forces of decay. Additional more detailed cost estimates would be prepared during the implementation of the comprehensive plan for each island fort. On the basis of these assumptions two levels of cost were estimated. The first cost is for limited renovation, necessary to render the forts safe. This cost was based on published unit cost data and rough estimates of the number of units needing renovation at each fort. The second cost is for full renovation and was based on MDC experience on George's Island.

Utilities.

The provision of electricity and water to the Islands was also considered as a major cost that is subject to more detailed estimates during the implementation of the plans for those Islands to be serviced. The preliminary estimates of these costs were based on the analysis of a variety of alternatives and assumptions.

Peddock's Island.

Cost estimates for the provision of utilities on Peddock's Island are based upon the replacement of an antiquated water line and the installation of a new electric cable from Hough's Neck in Quincy. The provision of these services from Pemberton Point in Hull was considered, but due to the deep rock channel and swift currents the Hough's Neck alternative is more feasible and less costly.

Cost estimates for sewage disposal were based on the utilization of septic tanks. The exact location of leaching fields, exact costs, and final feasibility will depend on detailed engineering studies and designs.

PEDDOCKS ISLAND

ITEM	NO.	UNIT	UNIT COST \$	FACTOR	TOTAL COST			TOTAL
					PHASE I	PHASE II	PHASE III	
1. Clear & Grub				53	53,511	32,107	21,404	107,022
4. Seawall		3,160LF		15		174,512	174,512	349,025
5. Pier				15	28,405			28,405
Float	6		1,700EA	15	11,730			11,730
Ramp	1		1,300EA	15	1,495			1,495
8. Water				53	215,983			215,983
Sewer				53	204,598			204,598
Electric				53	214,830			214,830
9. Bldg.								
Demo.				25	20,968	18,000		38,968
Rehab.	26 Bldg.			50	774,540	516,360		1,290,900
Constr.								
Bathhs.	1	1,080SF	70/SF	25	94,500			94,500
Campste.	3	2,120SF		25	176,125	158,000		334,125
Struct.								
Conces.	1	200SF		25		10,000		10,000
Shelter	1	100SF	10/SF	25		12,500		12,500
Other				25		10,000		10,000
Furnish.				35	235,170	156,985		392,155
10. Grading & Seeding				53	247,515	211,515		459,030
11. Trails								
Unpav.								
3'		8,000LF	33/100LF	25	3,300			3,300
Unpav.								
6'		15,000LF	67/100LF	25	12,200	150	150	12,500
Paved								
6'		39,600LF	.60/SF	25	29,750			29,750
Paved								
8'		80,000SF	.60/SF	25	18,000	21,000	21,000	60,000

PEDDOCKS ISLAND (Continued)

ITEM	NO.	UNIT	UNIT COST \$	FACTOR	PHASE I	PHASE II	PHASE III	TOTAL
						TOTAL COST		
12. Planting								
Decid.	275		40EA	53	4,500	11,284	1,046	16,830
Evergr.	125		30EA	53			5,738	5,738
13. Fort								
Renova.				53		114,061	114,061	228,122
14. Equipment								
Picnic								
Table	50		100EA	50	3,750	3,750		7,500
Firepl.	50		120EA	50	1,800	1,200	6,000	9,000
Benches	40		200EA	50	1,055	1,877	9,068	12,000
Trash								
Cont.	35		10EA	50	263	262		525
Drinking								
Fount.	10		700EA	50	1,050	816	8,634	10,500
15. Signs								
Large	1		3,000EA	25	3,750			3,750
Small	45		200EA	25	5,250	6,000		11,250
16. Trans.								
to Isl.				35	8,100	9,450	4,050	21,600
17. Miscel.								
Fire								
Truck						50,000		50,000
TOTAL					2,372,138	1,509,829	365,662	4,247,630

NOTE: Figures may not total due to rounding.

BENEFITS

No discussion of the costs of a large recreation and conservation program would be complete without some mention of the benefits to be derived from the expenditure. It must be admitted from the outset that the means of estimating economic benefits of such intangible activities as recreation and the enjoyment of the natural environment are relatively crude. However, a recent report* by the Federal Water Resources Council has provided a number of economic evaluations for water-related recreation activities. These evaluations have been based upon a variety of approaches which measure the hypothetical willingness of the consumer to pay for recreational activities. They are expressed in terms of unit values for a typical outdoor recreation day. The Island plans and transportation services have been designed to allow estimation of numbers of recreation days for each island activity. The accompanying chart presents the Island-by-Island estimates of annual economic benefits based upon the type of recreation activity.

It must be noted that the above evaluation does not include many of the important, but more difficult to assess values associated with the plans. For example, it does not include the economic value of conserving the various salt-marshes or the economic effect of a recreation day on the productivity of the person who is recreating. While these factors are more difficult to evaluate they are just as important and sometimes more so than the data presented.

*Federal Water Resources Council, "Standards for Planning Water and Land Resources," July, 1970.

ECONOMIC BENEFITS OF ISLAND RECREATION

<u>ISLAND & TYPE OF ACTIVITY</u>	<u>NUMBER OF ANNUAL RECREATION DAYS</u>	<u>VALUE/DAY*</u> <u>(ESTIMATE)</u>	<u>ANNUAL VALUE</u> <u>(ESTIMATE)</u>
Peddock's (Maximum Daily Use - 1,500 Persons)			
Conference and Recrea- tion Center	130,000	\$7.00	\$ 910,000
Play	10,000	2.00	20,000
Swimming	30,000	3.00	90,000
Historic Fort Visitation	10,000	4.00	40,000
Picnicking	10,000	2.00	20,000
Group Camping	10,000	4.00	40,000
Boating	10,000	6.00	60,000
Hiking, Nature Walks, etc.	20,000	2.00	40,000
			\$1,220,000

*The values in the Water Resources Council Document are presented within ranges under two categories, one for "general" recreation days and one for "specialized" recreation days. Because of the uniqueness of the Boston Harbor Islands general recreation values have been slightly increased depending on island uniqueness, a specific value, rather than a range, was assigned to each activity.

Spectacle

Boston Harbor Islands
Comprehensive Plan



Spectacle Island
Support Documentation

prepared for:
Massachusetts Department of Natural Resources



by:
Metropolitan Area Planning Council

*The preparation of this report was financially
aided through a federal grant from the Land and
Water Conservation Fund Program of the Department
of Interior, Bureau of Outdoor Recreation
Project #25-00065*

March 1973

SPECTACLE ISLAND

Description and History. Spectacle Island consisting of 96.9 acres was originally formed by two drumlins connected by a low sandbar. The name originated from the Island's resemblance to a pair of spectacles. The Island was granted to the City of Boston in 1634 and leased for agricultural use. Fine timber and pasture land covered the slopes of the drumlins.

In 1717 a quarantine hospital was constructed, and operated for the next 20 years until it was moved to Rainsford Island. Spectacle Island was a popular spot for picnics and excursion stops. About 1847, two summer resort hotels were opened. Gambling was a major attraction, until a police raid terminated this activity in 1857. Shortly thereafter, the hotel business failed.

After the hotels closed, the Island was purchased by Mr. Nahum Ward who established a rendering business. About 2000 horses a year were rendered to produce hides, glue-stock, horse hair, "Neat's Foot Oil," and bones. The rendering factory employed 30 men, 13 of whom lived on the Island with their families. The island factory provided a convenient location to dispose of the horses who died in the City and would have otherwise presented a considerable public health problem. By the early 1900's the demand for Ward's products and the supply of dead horses began to dwindle, and by 1910 the business had been abandoned.

PREVAILING WINTER WIND - NORTHWEST

AFTER LOW TIDE HOURS VELOCITY 1 1/2 2 1/2

AFTER HIGH TIDE HOURS VELOCITY 0 1 0 2

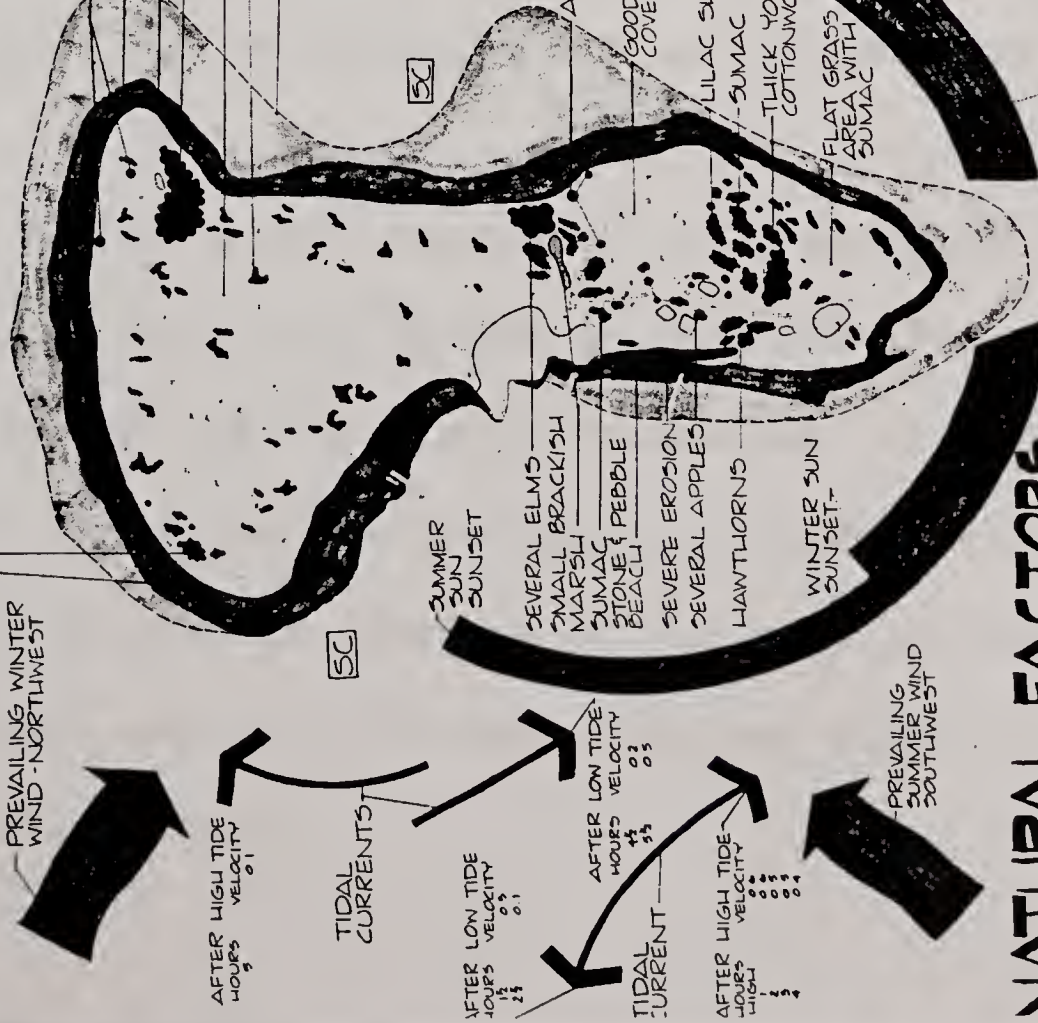
TIDAL CURRENT

AFTER LOW TIDE HOURS VELOCITY 0 1 0 2

AFTER HIGH TIDE HOURS VELOCITY 0 1 0 2

SEVERE CLIFF EROSION YOUNG COTTONWOODS

PREVAILING WINTER WIND - NORTHWEST



NATURAL FACTORS



SPECTACLE ISLAND

BOSTON HARBOR ISLANDS COMPREHENSIVE PLAN

MASSACHUSETTS DEPARTMENT OF NATURAL RESOURCES

Metropolitan Area Planning Council

MATURE APPLE TREES
STONE & PEBBLE BEACH
SEVERE CLIFF EROSION
YOUNG COTTONWOODS
SPARSE GRASS COVER
SCATTERED SUMAC
APPROXIMATE LINE OF
INTERTIDAL ZONE

SUMMER SUN
SUNRISE
JUNE 22

LEGEND & NOTES

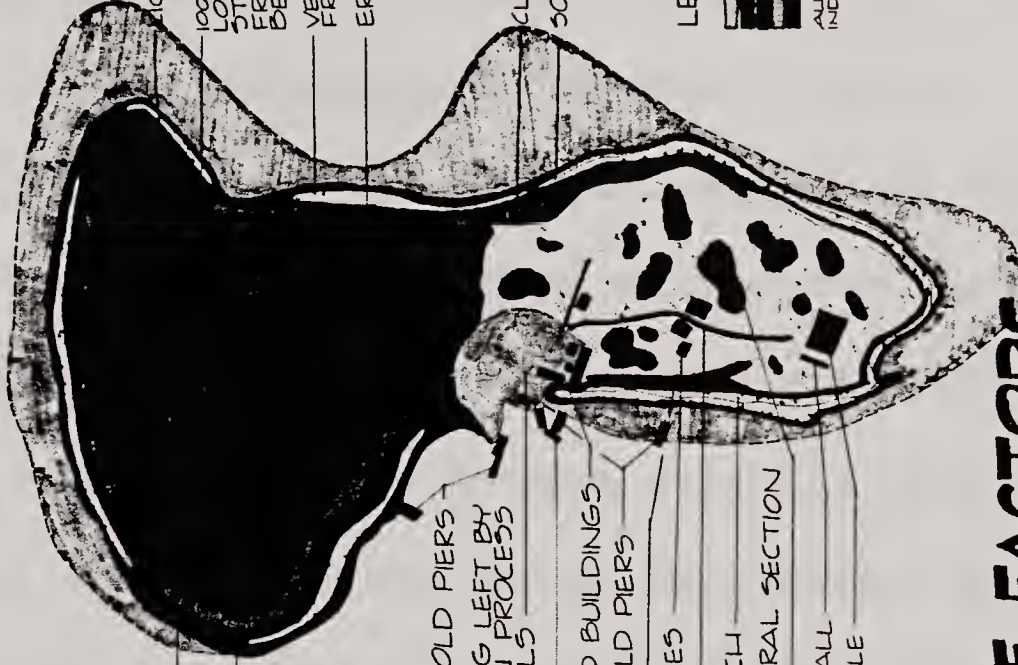
GRASS
SHRUBS
TREES
EROSION
BEACH
WIND DIRECTION
CURRENTS AFTER
TIDE
VELOCITY AFTER
TIDE
TIME OF SPRING
TIDE
WATER SUITABLE FOR
BATHING EXCEPT
SHELLFISHING
ALL OTHER FACTORS
ARE INDICATED
ON THE DRAWING

WINTER SUN
SUNRISE
DECEMBER 22

AFTER HIGH TIDE
HOURS VELOCITY
0 1 0 2

TIDAL CURRENT

SUN EXPOSURE ARC



MAN-MADE FACTORS



SPECTACLE ISLAND

BOSTON HARBOR ISLANDS COMPREHENSIVE PLAN

MASSACHUSETTS DEPARTMENT OF NATURAL RESOURCES


Metropolitan Area Planning Council


In 1921, the City of Boston signed a contract with the Boston Sanitary Development Company for the reclamation of grease from the City's garbage which was brought to Spectacle Island. The garbage was cooked and compressed to extract the grease which was sold to soap manufactures. The processed garbage was placed in flat cars to be dumped on the Island and covered with rubbish. In 1922 the contract was awarded to Coleman Disposal Company. Twenty-four men were employed in the grease reclamation plant. By the 1930's the market for reclaimed grease diminished and the costly reclamation process began to lose money. In 1935, the grease extraction plant was abandoned. The City continued to dump raw garbage and rubbish on the Island until 1959, when the South Bay Incinerator was opened. The size of the Island was increased approximately 36 acres while it was used as a dump and the piles of garbage are estimated to be in excess of 100 feet deep. Almost all of the dumping activity occurred on the low sandbar connecting the two drumlins and on the northern drumlin.


In 1960, after the dump was abandoned, fire, probably from spontaneous combustion, broke out on the Island. The Fire Department decided to let the fires burn themselves out. Efforts were made to control the fires but underground blazes still smolder today, sometimes undermining the surface of the dump and causing cave-ins. The distinct odor of a burning dump may still be detected near Spectacle Island.

SPECTACLE ISLAND


SLOPE

 0 - 5%


 5 - 12%

 12% and above

GEOLOGY

 Beach, Sand, Gravel


 Silt, Muck, Peat


 Man-made


 Drumlin


 Bedrock


BEACH AREAS


 Mostly Sand (fine sand)


 Coarse Sand (coarse grade sand, pebbles, shells)

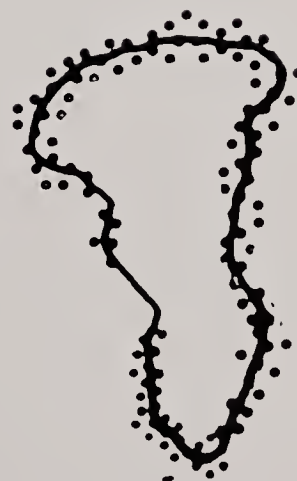
 Mixed (coarse sand, pebbles, shells, small rocks)

 Rocky (small rocks to 8 inches in diameter)

 Seawall/Rip-rap (broken/intact seawall/rip-rap)

 Steep-eroded Banks (areas of major erosion)

 Bedrock (outcropping)



The low area between the two drumlins contains the ruins of the grease extraction plant, whose dominant feature is a 90 foot draft chimney. This area, approximately 20 acres, is currently owned by a salvage firm which loads burnable building demolition materials on steel barges and burns them off shore. The Island is used to separate metal from the ash and rubble. The metal and ash are stored on the Island for later sale as salvage or fill. The southern drumlin is the more natural with stands of small trees, cottonwood and apple and brush. Ruins of several old buildings are scattered over the area which is littered with broken glass and scattered rubbish. The shoreline surrounding the Island is mostly rocky and in many places is bounded by cliffs of decomposing trash. The Island is used extensively as a nesting area by gulls and to a lesser extent by pheasant and duck.

SPECTACLE ISLAND

Plan. The plan for Spectacle Island recognizes the problems presented by more than 100 years of abuse of the Island's natural environment. It emphasizes a long term program of Island reclamation and the excellent potential of the Island as a base for a large 500 boat moorage area. Other important features include a picnic area, informal playfields, and a potential swimming beach at the southern end of the Island.

Several means of reclaiming the dump area were investigated. While a project of this nature requires a more detailed engineering study, the most practical solution appears to be periodic compaction of the dump surface after several days of pumping water into the area to control underground burning. Such a procedure may have to be repeated several times. The plan proposes a system of trails bordering the Island with boardwalks to allow passage across the dump. The trail system permits use of the area for observation of the nesting gulls and facilitate viewing of the various steps of the reclamation process. Plant cover would be important, both for wildlife and to aid in the decomposition of the compacted rubbish. Interpretive signs are proposed to explain the reclamation process and the life cycle of the nesting gulls. The final use of this area depends largely on the success of the reclamation project. Eventually with the addition of topsoil, trees might become established and the signs of the Island's 100 years of abuse would become only memories.

The steeply-eroded banks of the dump area, especially on the eastern side of the Island, present another problem. As erosion occurs, layers of rubbish are exposed and either left on the beach or washed away with the outgoing tide to litter some other beach. The plan proposes the construction of a rip-rap wall to retain this material and an extensive planting program to control erosion.

The area west of Spectacle Island offers a protected mooring area in excess of 300 acres of water surface. The water averages between 10 and 15 feet deep, an excellent depth for small boat moorages. Currents are moderate and the mooring area has two easy entrances, one from the north and the other from the south. The area is protected from northeast storm winds and is relatively close to downtown Boston and fishing areas in the Harbor. Vandalism at this moorage area would be a minor problem compared to the mainland marinas.

The plan provides mooring space for at least 500 small boats and an Island marina with dock space for 100 boats. At least 50 of these slips could be reserved for transients. Easy access to downtown Boston, other shore points and Islands is provided by the Dorchester Bay Loop, the future "neighborhood loop" and by special motor launches. Additional programs could include row-boat, sailboat, and fishing skiff rentals and bait sales. In addition to the dock space, island facilities include locker space, storage space for moorings, winter storage space for rentals and

approximately 100 small boats, a Harbor master's office, and repair space. No shore-dependent utilities or facilities for gas or diesel sales are proposed in the plan. Instead, electricity is provided by a generator and water would be supplied by a rooftop reservoir filled by one of the Harbor's water boats. One comfort station/bathhouse is provided. Food and bait sales could be provided from a boat docked at the marina. Eventually, other utilities may be desirable, but the success of the marina facility can be established before such expensive facilities are provided. Boating and yachting clubs may be interested in developing joint programs with the marina and rental facilities.

Clean-up, a planting program, trails, an informal picnic area on the southern drumlin, informal playfields on the flat area in the center of the island, and a swimming beach at the southern end are other major provisions of the plan. Water quality is a major consideration of the swimming beach. The amount and effect of leaching into the Harbor from the old garbage dump is unknown. The area at the southern end of the Island is suitable for a swimming/sunbathing beach but is, of course, dependent upon improved water quality.

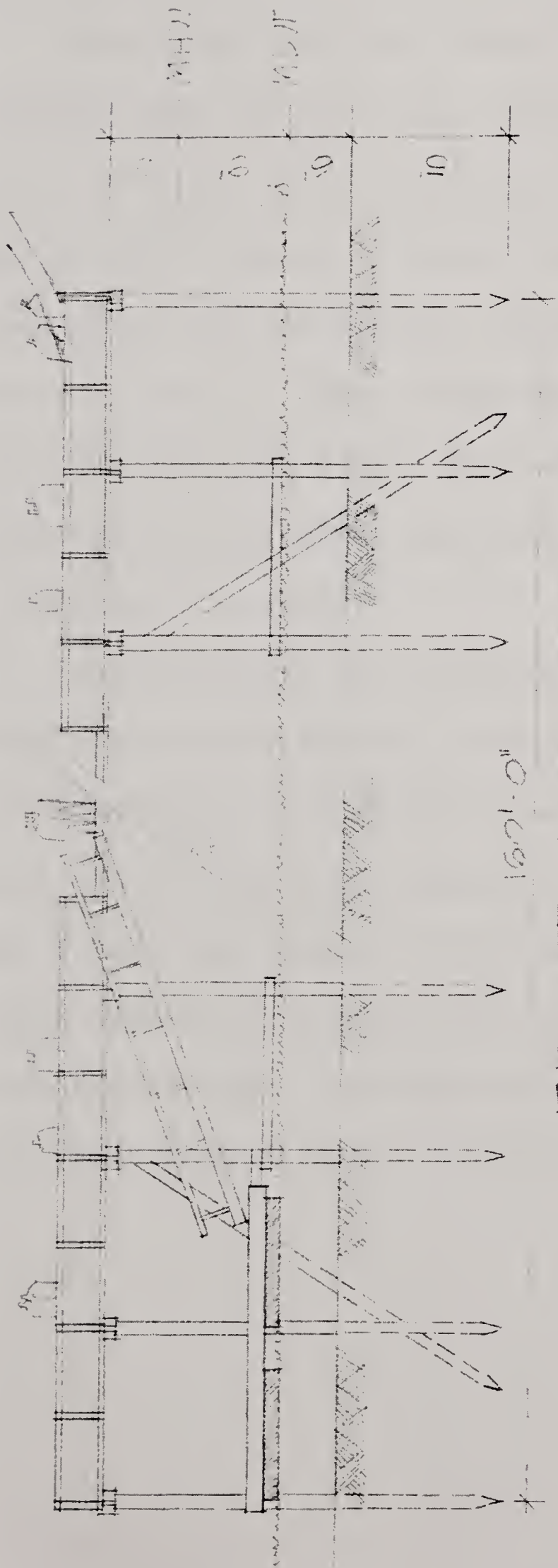
PIERS AND FLOATS

Two general types of piers have been defined by the Island plans. These include major ferry landings and minor ferry landings or small boat docks.

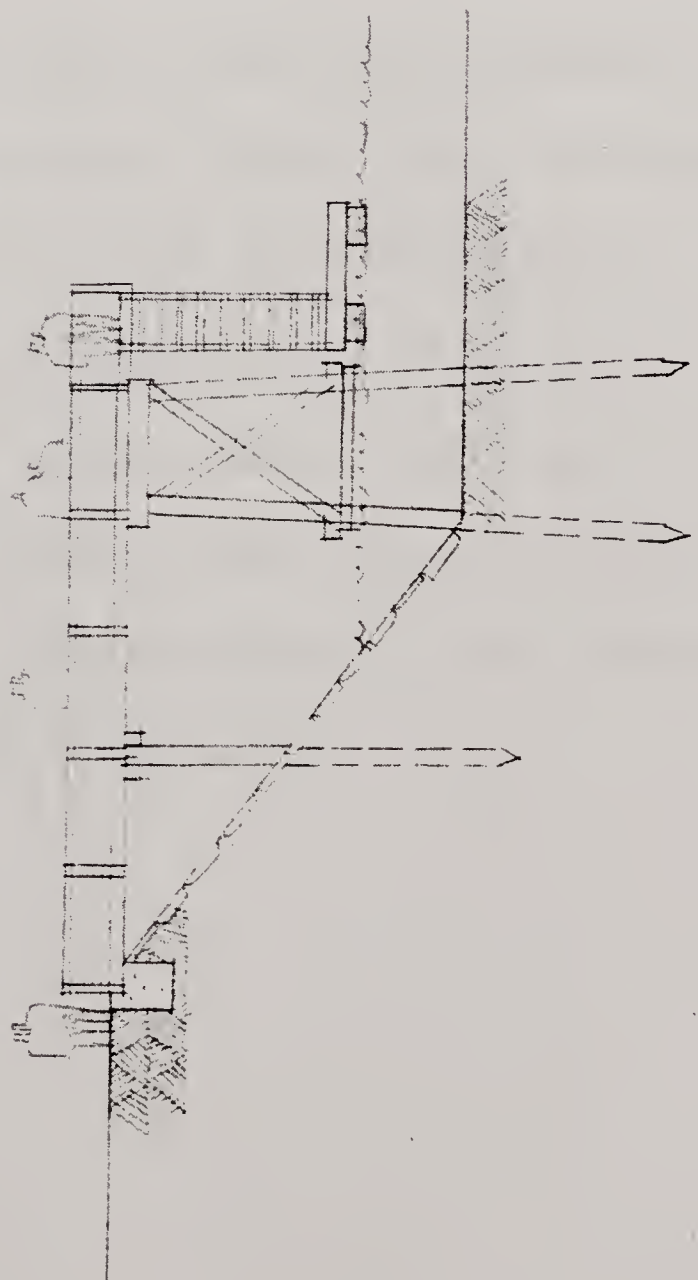
Major ferry landings are designed to accommodate the docking and unloading of the large ferry boats, operating on the Dorcehster Bay Ferry Loop and the main line Boston-to-Nantasket Ferry "spine"; smaller ferry boats; and private boats. With the exception of Spectacle Island all of the major proposed ferry landings are old, rehabilitated piers or currently used docks. Spectacle Island requires the construction of a new pier. Each of the piers needing rehabilitation is different and, therefore, requires an independent study and design.

Minor ferry landings are designed to accommodate the docking and unloading of the smaller 50 passenger ferries and private boats. These piers represent new construction and a typical design is included as an illustration. The treated timber piers are 10 feet wide with floor planking, bumper rails, and guard rails also made of timber.

MINOR FERRY LANDING & FISHING PIER BOSTON HARBOR ISLAND



FRONT ELEVATION 1/16" = 1'-0"



SIDE ELEVATION 1/16" = 1'-0"

Both major and minor ferry landings are provided with treated wood, floating boat docks and ramps that rise and fall with the tide. Preconstructed units or modules of floating wood docks provide safe, flexible, attractive, and relatively inexpensive facilities for small boats and for the minor ferry landings. A module 9 feet, 6 inches wide and 30 feet long has been recommended as being the most stable for Boston Harbor conditions. The Island plans provide floating dock space for approximately 365 boats at a variety of Islands.

Fishing piers are combined with all of the ferry landings. Fish cleaning facilities, including running water, where available, are provided at all fishing piers. The fish cleaning station consists of a covered trough with spring-action water spigots. The wastes are carried to the center of the trough and then to a drain largely eliminating the objectionable mess remaining after fish are cleaned. On docks without running water, a foot operated sea-water pump might be a feasible alternative.

LANDSCAPING

The plans for the Harbor Islands have identified several types of landscape treatment, including selective clearing of underbrush, planting for erosion control, shade tree planting, screen and windbreak planting, and planting for wildlife habitat improvement.

It is important to recognize the unique qualities of the seashore environment offered by the Harbor Islands. The preservation and enhancement of these special qualities require a sensitivity to this natural resource. It affords the people of the Commonwealth rare opportunities for aesthetic, recreational and educational experiences. For this reason recreational development should be accompanied by an active conservation management program, emphasizing a cautious understanding of the possible effects on the various interdependent habitats.

SELECTIVE CLEARING

A program of selective clearing of underbrush and thinning of young saplings is recommended on several islands. Dense sumac, poison ivy, and young saplings have overgrown many islands as part of a natural process of plant succession from open fields to young and finally mature forests. Some recreational uses, views, walking trails, and conservation management programs justify clearing of carefully selected areas of brush and trees. Where possible, established trails should be improved before disturbing brush areas to build new trails. In all cases the possible effects of clearing should be considered before such changes are made.

PLANTING FOR EROSION CONTROL

Erosion of the banks on the drumlins of the Harbor Islands is very common. Planting of these banks with certain ground covers, grasses or easily rooting vines and creeping shrubs, is an important means of helping to prevent this erosion. The plants should be vigorous growing species, which root along procumbent (trailing on the ground) stems on the surface or with underground stolons or runners. Both types of growth tend to hold the soil and keep it from eroding in storms. Soil type, soil moisture, steepness of the bank, and the urgency of stopping erosion all govern the type of plant selected and the planting distances to be used.

SHADE, WINDBREAK AND SCREEN TREE PLANTING

The plans indicate shade trees in a variety of areas which would be used for the passive enjoyment of nature, for picnicking sites, for camping sites, and around buildings and other intensively used facilities. Deciduous trees offer the advantage of providing shade during the summer months and allowing maximum sun penetration in the winter after the leaves have fallen.

Trees are also recommended for windbreaks, especially around open exposed areas such as playfields, and on the north and northeast sides of various facilities. Evergreen trees, with their relatively dense year-round foliage, provide good windbreaks. A combination of a majority of deciduous trees planted on the

south side of trails and other facilities and a majority of evergreen trees on the northern side can provide the advantages of shade in summer, sun in winter and wind protection from the harsh northerly winds of the winter.

Screen trees, mostly evergreens, and other screen plants such as bush shrubs are indicated on the plans for a variety of purposes, including the assurance of privacy, screening unattractive facilities, and isolating one use from an adjacent, incompatible use. One picnic table or campsite can seem relatively private and isolated from adjacent facilities by the careful provision of screen planting. A variety of shrubs are also especially attractive as a means of softening the lines of buildings and helping them appear more as a part of the Islands' natural environment. Several varieties of shrubs are also desirable for their contribution to the visual quality of the Harbor. These include flowering shrubs and varieties selected for their fall foliage.

PLANTING FOR WILDLIFE HABITAT IMPROVEMENT

All wildlife need food and cover. To adequately support wildlife, there should be a plentiful year-round supply of food close to cover which furnishes protection from predators and weather.

Wild fruits, insects, aquatic animals, grains, nuts, and green plants will generally provide an ample supply of food for some birds and small mammals from late spring to late fall. Food becomes scarce in winter and early spring. Shrubs that keep nuts and berries into the winter and remain above the snow cover, and other cover plantings that protect such natural food sources as grasses and grains, are important winter food sources.

Birds and small mammals need several kinds of cover to conceal nests, to provide shade from the hot sun, to provide shelter from chilling rains, to allow escape from enemies, and to protect against snow, cold and wind in winter. Grasses, weeds, and other low growing plants provide mating and roosting areas for some species; dense or thorny shrubs provide protection from predators and spots for nesting and loafing; and clumps of evergreen or other tall dense growth provide cover for winter protection. Selective cutting in a wooded area allows the penetration of sunlight, promoting the growth of succulent grasses, shoots and weeds attractive to some wildlife.

Open fields can be improved as a wildlife habitat by increased tree and shrub plantings to provide a variety of cover and food. Nesting cover and food for birds can be created by surrounding windbreaks and screen tree clumps with fruit producing shrubs, and loafing space and cover for ground nesting birds can be provided by the planting of grasses and grains, which will attract insect populations creating an additional source of food for birds. The combination of grasses, shrubs, and screen trees in a confined area creates a hedgerow between woodland cover and field feeding areas.

In addition to plantings, access to small bodies of water, marshes, and mud flats is an important element for attracting wildlife. Waterfowl and wading birds are dependent upon shallow water areas to feed and loaf. Existing marshes may be improved by selective planting. The careful dredging of portions of some marshes may increase the productivity and variety of plants and animals. Wildlife areas should be separated by screen planting and distance from incompatible uses. Birds and other wildlife need privacy, especially during the nesting season. Paths and nature walks should be close enough to wildlife areas for vantage points but not so close that wildlife will be disturbed.*

*Additional information on landscape treatment, including plant materials for seashore conditions, erosion control, and wildlife habitat improvement is included in the Boston Harbor Islands Comprehensive Plan, Appendix, p. 148, Metropolitan Area Planning Council, Boston, Massachusetts, October, 1972.

COMFORT STATIONS

Three types of comfort stations have been identified by the Island plans -- large comfort station/bathhouse combinations; smaller comfort stations; and chemical toilets.

The larger comfort station/bathhouse combinations are generally located adjacent to the largest swimming beaches or group camping sites and consist of two sets of rest rooms, each provided with shower stalls. The size of each facility varies with the number of persons it is intended to serve. Each comfort station/bathhouse combination is provided with hot and cold running water and a septic system or is connected with a larger sewage treatment system.

Comfort stations without bathhouses are provided in several intensively used locations away from large beaches and camping complexes. These facilities consist of two sets of rest rooms and are also provided with running water and sewage disposal systems.

The location of the comfort stations has been based on tentative considerations of surficial drainage and topography. Final location will depend on further analysis and detailed engineering studies of subsurface soil drainage.

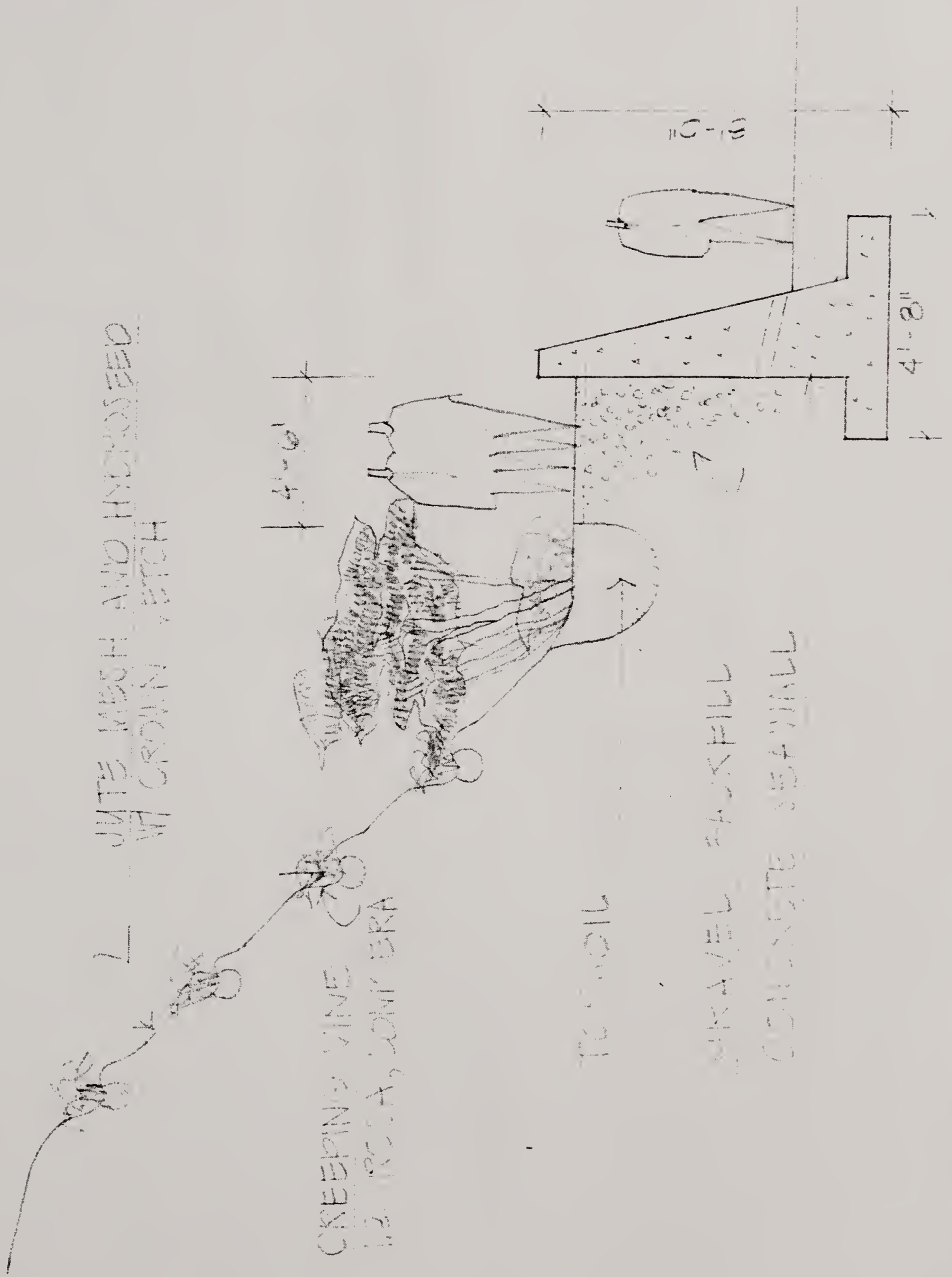
Chemical flush toilets, attractively housed in a specially designed comfort station, provide an excellent means of providing public sanitation facilities in less intensively used areas or in locations that are not suitable for septic tank construction. Public demand for good self-contained sanitation facilities, as a way of reducing pollution problems, has resulted in dramatic changes in the quality and efficiency of chemical toilets. New self-contained, recirculating, flushing toilets provide a 99% decrease in fresh water requirements because they filter, chemically treat and re-use the same water to flush the bowl. Such facilities are currently being used in many national parks and recreation areas. They are attractively designed for public use and easy service and maintenance. They also provide an excellent interim facility while more permanent comfort stations are being constructed.

Other interim facility considerations may include the design and placement of special utility barges at the docks of some islands. Such a barge would have a water reservoir, chemical toilets, and a power generator, providing good flexibility, mobility, and security.

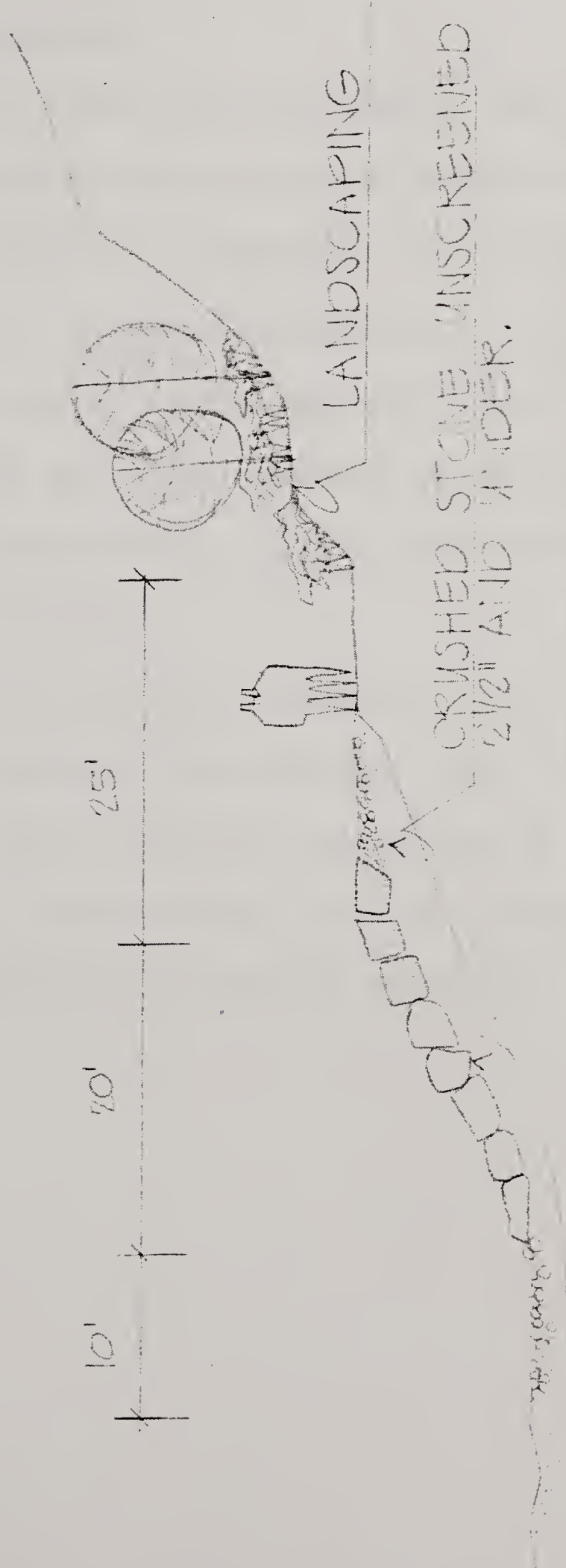
SEAWALLS AND REVETMENTS

The building of seawalls and revetments has received some attention in this report as a means of retarding the natural forces of erosion. Each case of erosion on the Harbor Islands is distinct and would require further, more detailed study than that within the scope of this Plan. In several cases the very excellent cut granite seawalls, constructed in the mid 1800's are in need of repair. These repairs should be done as soon as possible or extensive damage to the Islands may occur. The plans have indicated general areas on the major Islands where erosion is severe and protection appears necessary and desirable. The selection of these areas has included considerations of the size and use of the Island and its value for the total Park System. In all cases the benefits have surpassed the costs of providing the protection. This is, of course, subject to more rigorous analysis of both the costs and benefits.

The designs of the protective seawalls should be compatible with the natural character and use of the Islands. Access to the beach areas below the seawalls should be provided and the top of the wall or rip-rap berm should accommodate walking trails and not block views.



RETAINING STRUCTURE and EROSION CONTROL
BOSTON HARBOR ISLANDS



SLOPE 10:12 - RIPRAP LOGS
 6000 LBS. THICKED W/ ONE
 MAN STONES,

RIPRAP SECTION
 No. 1000

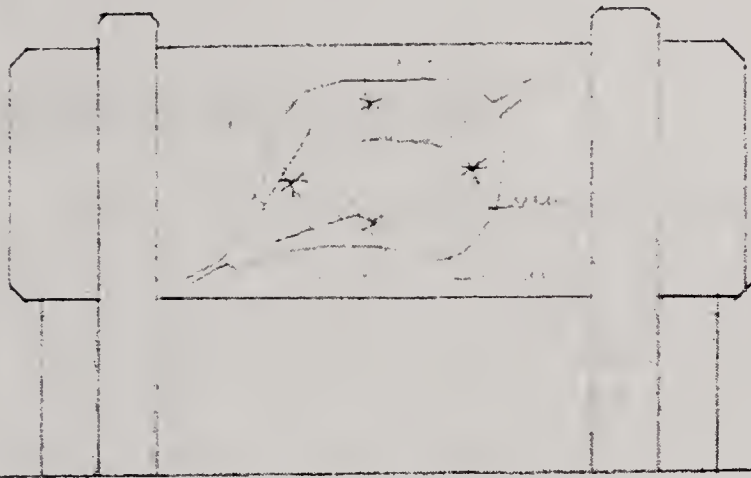
RETAINING STRUCTURE - RIPRAP WALL
 BOSTON HARBOR SLANDS

INTERPRETIVE MARKERS

Markers or signs are indicated on many of the Island plans to give information on the history and ecology of the Islands. Such markers should be compatible with their surroundings. On nature trails or in other predominately natural areas markers should have a rustic appearance and be made of natural materials, including stone and wood. Markers on buildings or in some historic areas might appropriately utilize more durable man-made materials, such as metal plaques.

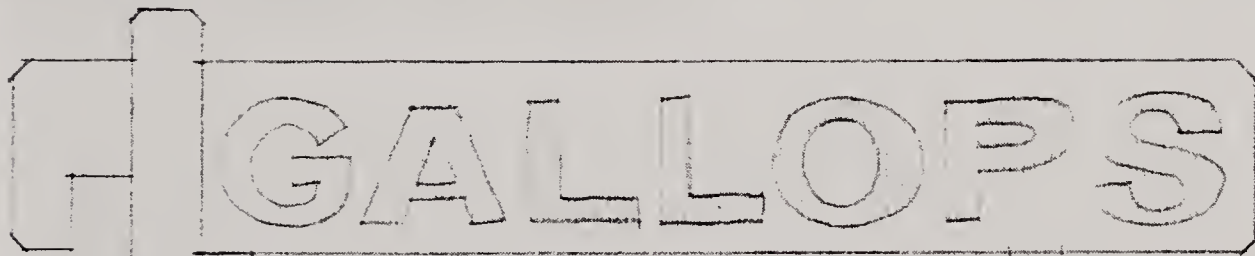
Interpretive centers in natural areas on some islands incorporate a shelter with markers, maps and other descriptive information. These shelters are located at the beginning of several nature walks through wildlife sanctuaries and in other areas with special environmental features.

3-2



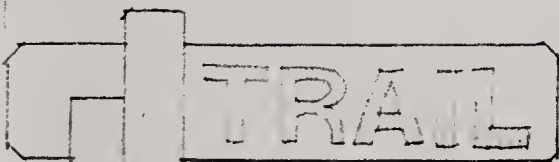
TERRESTRIAL SIGN 12'-0"

10'-0"



ISLAND SIGN 12'-0"

4'-6"



10'-0"

1'-6"



2'-0"

MARKERS AND POINTS OF INTEREST

ISLAND SIGN DETAILS
BOSTON HARBOR ISLANDS

ISLAND ADMINISTRATION

The administration and operation of the Harbor Islands Park System is clearly placed with the Massachusetts Department of Natural Resources. Other important participants in the operation of the Park System include the Metropolitan District Commission, the cities and towns surrounding the Harbor, and a variety of other public agencies and private groups. Many of the details of operation and administration will have to be determined by the Department of Natural Resources through a process of cooperation with the various responsible agencies and groups. The following description will tentatively discuss the administration of each Island. These considerations are based on numerous conferences with the parties involved and represent a general consensus of island administration that may be further detailed and modified by inter-agency agreements.

SPECTACLE ISLAND

A portion of Spectacle Island is currently privately owned, while the remainder is owned by the City of Boston. Due to the nature of the special problems of reclaiming the garbage dump and developing it for recreational purposes, the Island should be owned by a single agency. The Department of Natural Resources should take the major role in the development of Spectacle Island. While the City of Boston has an interest in the future of Spectacle Island, it currently lacks the financial resources to undertake major island construction projects. Appropriate inter-agency agreements involving lease or transfer arrangements and financial support should be developed between the City and DNR.



SUMMARY OF COSTS AND PRIORITIES

Introduction

The costs and priorities for achieving the recreation and conservation purposes of the Harbor Islands Legislation have been developed in conjunction with the plans for each Island. Direct capital costs for the construction of piers, trails, picnic areas, small boat docks, landscaping, buildings, and other facilities for the enjoyment and construction of the Islands' man-made and natural resources total approximately 27 million dollars. This figure is derived from a detailed analysis of each Island's plan. However, any cost estimates, which are based on large scale designs, are necessarily tentative. They are subject to the more rigorous studies of costs to be conducted during the implementation of the general plans.

Priorities and Phasing

The expenditure of limited funds for any project can best be made according to a fairly detailed time schedule of development that is based on a system of priorities. While a detailed time schedule aids in ordering the implementation of a project, flexibility in many of the work elements will permit changes when special, unforeseen opportunities or difficulties are discovered.

Three time periods or phases have been used to schedule costs for the Harbor Islands Comprehensive Plan. Each of these three phases has recommended projects to be started within certain specific time periods. However, the schedule is not intended to be a strict year-by-year listing of work to be completed. Instead the three phases indicate levels of priority. Phase I, 1972-1975, corresponds to projects of the first priority, Phases II, 1976-1980, and III, 1981-1990, equal second and third priorities, respectively. In several obvious cases, work begun in Phase I must be completed before Phase II projects are begun, in other cases Phase II projects may be started during Phase I or before certain Phase I projects are completed; thus, the dates and divisions between phases are relatively flexible.

Costs.

Development costs for the individual Island plans have been prepared by the MAPC from a variety of sources, including published unit cost data, current cost information from local contractors, equipment catalogues and the costs of MDC and DNR projects that are applicable to the Island plans. Actual bid prices received by the Massachusetts Department of Public Works and information from marine contractors were used to develop costs for seawall and pier construction. Costs for barge removal were obtained from the draft of the U.S. Army Corps of Engineers "Debris Removal Study" and from information provided by marine contractors. Costs for transportation of material and workmen were obtained from various marine transport companies working in the Harbor.

SPECTACLE ISLAND

ITEM	NO.	UNIT	UNIT COST \$	FACTOR	TOTAL COST			TOTAL
					PHASE I	PHASE II	PHASE III	
1. Clear & Grub		19,350SY	.35/SY	53	10,404			10,404
2. Dredging				25			76,250	76,250
3. Barge Removal	1		2,000	15	2,300			2,300
4. Seawall				15			94,530	94,530
5. Pier & Board.				15			379,684	379,684
8. Chemical Toilet	1		5500EA	53			8,415	8,415
9. Building Demol.				25	44,000			44,000
Constr. Locker	1	1,200SF	10/SF	25	15,000			15,000
10. Grading & Seeding				53		178,159		178,159
11. Trails Unpav. 6'		7,700LF	167/100LF	25		1,931	4,506	6,437

SPECTACLE ISLAND (Continued)

ITEM	NO.	UNIT	UNIT COST \$	FACTOR	PHASE I	<u>TOTAL COST</u>		TOTAL
						PHASE II	PHASE III	
12. Planting	400		40EA	53		12,240	12,240	24,480
Evergreen	200		30EA	53		9,180	9,180	18,360
Shrubs	300		10EA	53		2,295	2,295	4,590
14. Equipment								
Picnic								
Table	25		100EA	50		3,750		3,750
Benches	20		200EA	50		6,000		6,000
Trash								
Cont.	10		10EA	50		150		150
Fire-								
place	25		120EA	50		4,500		4,500
15. Signs								
Large	1		300EA	25		3,750		3,750
Small	13		200EA	25		3,250		3,250
16. Trans.								
to Isl.				35	4,725	4,725	4,725	14,175
17. Pump for								
Extingu-								
ishing								
Fire					51,844			51,844
TOTAL					128,273	229,930	591,825	950,028

NOTE: Figures may not total due to rounding.

BENEFITS

No discussion of the costs of a large recreation and conservation program would be complete without some mention of the benefits to be derived from the expenditure. It must be admitted from the outset that the means of estimating economic benefits of such intangible activities as recreation and the enjoyment of the natural environment are relatively crude. However, a recent report* by the Federal Water Resources Council has provided a number of economic evaluations for water-related recreation activities. These evaluations have been based upon a variety of approaches which measure the hypothetical willingness of the consumer to pay for recreational activities. They are expressed in terms of unit values for a typical outdoor recreation day. The Island plans and transportation services have been designed to allow estimation of numbers of recreation days for each island activity. The accompanying chart presents the Island-by-Island estimates of annual economic benefits based upon the type of recreation activity.

It must be noted that the above evaluation does not include many of the important, but more difficult to assess values associated with the plans. For example, it does not include the economic value of conserving the various salt-marshes or the economic effect of a recreation day on the productivity of the person who is recreating. While these factors are more difficult to evaluate they are just as important and sometimes more so than the data presented.

*Federal Water Resources Council, "Standards for Planning Water and Land Resources," July, 1970.

ECONOMIC BENEFITS OF ISLAND RECREATION

<u>ISLAND & TYPE OF ACTIVITY</u>	<u>NUMBER OF ANNUAL RECREATION DAYS</u>	<u>VALUE/DAY*</u> <u>ESTIMATE</u>	<u>ANNUAL VALUE</u> <u>(ESTIMATE)</u>
Spectacle (Maximum Daily Use - 400 Persons)			
Picnicking	5,000	\$2.00	\$ 10,000
Play	5,000	2.00	10,000
Swimming	5,000	3.00	15,000
Boating	40,000	6.00	240,000
Hiking, Nature Walks etc.	10,000	2.00	20,000
			\$295,000

*The values in the Water Resources Council Document are presented within ranges under two categories, one for "general" recreation days and one for "specialized" recreation days. Because of the uniqueness of the Boston Harbor Islands general recreation values have been slightly increased depending on island uniqueness, a specific value, rather than a range, was assigned to each activity.

